

# ALLOCATION OF RESOURCES IN THE SOVIET UNION AND CHINA—1983

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## HEARINGS

BEFORE THE

SUBCOMMITTEE ON INTERNATIONAL TRADE,  
FINANCE, AND SECURITY ECONOMICS

OF THE

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CONGRESS OF THE UNITED STATES

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We know that we have already heard testimony from your counterpart, the Defense Intelligence Agency, and that testimony, plus your own, will comprise the published proceedings of this hearing.

By the way, I would like to mention, as I did to General Bissell before you, that this marks the 10th anniversary of these hearings, which I initiated in 1974. I think we can all be proud of the record that has been compiled, especially the contributions by the spokesmen for the intelligence community, such as yourself. With any luck and continued cooperation, the series will continue.

Mr. Gates, you may introduce the people who accompanied you and then proceed with your presentation.

**STATEMENT OF ROBERT GATES, CHAIRMAN, NATIONAL INTELLIGENCE COUNCIL AND DEPUTY DIRECTOR FOR INTELLIGENCE, CENTRAL INTELLIGENCE AGENCY, ACCOMPANIED BY JAMES NOREN AND JOSEPH LICARI, OFFICE OF SOVIET ANALYSIS; LANCE HAUS, OFFICE OF GLOBAL ISSUES; AND ROBIN PHILLIPS, OFFICE OF EAST ASIAN ANALYSIS**

Mr. GATES. Thank you, Mr. Chairman. I am accompanied by four people: Mr. James Noren and Mr. Joseph Licari of our Office of Soviet Analysis, on my left; Mr. Lance Haus, on my right, of our Office of Global Issues, who works on Soviet energy matters; and Mr. Robin Phillips, a specialist on the Chinese economy in our Office of East Asian Analysis.

As you requested, Mr. Chairman, I have put together a summary of the overall statement, and I expect that it will run about 20 minutes, or thereabouts.

Senator PROXMIRE. OK. Fine. Go right ahead.

Mr. GATES. Let me start with the Soviet Union and economic developments in the past 2 years.

**ECONOMIC DEVELOPMENTS IN THE SOVIET UNION**

Last year and the year before, growth in the Soviet gross national product averaged about 2 percent per year, somewhat above the level attained during 1979-80, but well below both the rate achieved during the 1970's and the rate implied by the 1981-85 plan.

The slowdown in the growth of industrial output was especially worrisome. In 1981-82, the average annual growth was then 2½ percent, about half the rate called for in the 1981-85 plan. Two developments during this period were particularly noteworthy. The slowdown was evident in practically every industrial branch, and the productivity of labor and capital employed in industry was down dramatically.

Within industry, the growth of energy production in the U.S.S.R. has decelerated significantly; while gas output grew rapidly in 1981 and 1982, raw coal output increased in 1982 for the first time since 1978. After three decades of growth, oil production in the U.S.S.R. has begun to level off, although the prospects for the future are considerably better than we once believed.

Based on some extensive research over the past 2 years, we now estimate that the combined output of Soviet oil, natural gas, and coal will increase by 10 to 12 percent in 1981-85, compared with

the 22 percent achieved in 1976-80. In the latter half of the decade, energy production will be about 6 percent greater than in 1981-85. Oil production probably will plateau by the middle of this decade and then subside slowly by 1990. All things considered, the energy picture implies much less of a constraint on growth of the domestic economy than we thought last summer.

Shortfalls in the general availability of raw materials were a major reason for the marked slowdown in industrial production in 1981-82. Declining growth in production of coal and its deteriorating quality, for example, hurt electric power and ferrous metallurgy. Shortages of electric power, in turn, impaired the performance of industrial power customers, and an insufficient supply of steel products contributed to lower growth in machinery production.

The low rate of growth in machinery output, only 3.2 percent during 1981-82, is about half the rate planned for 1981-85 and by far the lowest since World War II. Machine building is a pivotal sector, producing military hardware as well as consumer durables and machinery for investment. The hard choices facing Andropov are most evident in this sector.

The value of agricultural output, almost the same in 1981 as in 1980, increased by somewhat more than 3 percent in 1982. [Security deletion.]

Even with the 1982 rebound, farm output was still nearly 7 percent below the 1978 peak year level.

A substantial share of the responsibility for the fall off in industrial growth must be assigned to bottlenecks in the transportation of both raw materials and finished products. Total freight turnover, which has increased at an annual rate of 3.5 percent during 1976-80, actually fell last year. The principal culprit has been the railroads, which shoulder the major part of the transportation burden in the U.S.S.R.

As Andropov noted in his early speeches, much remained to be done in the area of consumer welfare when he took office. According to our estimates, total per capita consumption increased in 1981 by about 1 percent, but then declined in 1982 by about 1 percent. Meanwhile, the availability of quality foods declined generally. Per capita meat consumption, for instance, was down slightly in 1982 from its peak 1979 level.

The U.S.S.R. substantially improved its hard currency payments position in 1982, however. By strongly pushing oil exports and holding down imports, the Soviet Union slashed its hard currency trade deficit to \$1.2 billion or about one-third of the deficit incurred in 1981. By the end of the year, gross hard currency debt had fallen by an estimated \$800 million and totaled about \$20 billion. Assets held in Western banks were a record high \$10 billion at the end of last year.

#### MILITARY OUTLAYS

Mr. Chairman, I have just reviewed the general performance of the Soviet economy during the last 2 years. Let me turn now to the particular issue of the cost of Soviet military programs.

As we noted in our submission to your subcommittee,<sup>1</sup> our latest estimate indicates that Soviet outlays in constant prices have leveled off since 1976 in at least one major area: procurement of military hardware. Costs in all all other categories of Soviet defense continued to grow over the entire 1972-81 period. [Security deletion.]

As General Bissell indicated in his June testimony, DIA estimates of weapons production also show flat or declining trends for major categories since the mid-1970's. The DIA's estimate of Soviet defense spending, which includes inflation, shows substantial growth in total defense and procurement costs, though at a somewhat slower rate since 1976.

Senator PROXMIRE. When you say "includes inflation," you mean it does not adjust for inflation, and therefore, the increase includes the fact that prices were higher?

Mr. GATES. Yes, sir.

Senator PROXMIRE. So that if there were an adjustment for inflation, then it would show a lesser increase; is that right?

Mr. GATES. Yes, sir. That is right.

#### REASONS FOR SLOWER MILITARY GROWTH

The continued slow growth since 1976 seems related to a combination of complex factors, including technological problems, industrial bottlenecks, and policy decisions. We know that a number of major Soviet weapons ran into technical delays that pushed their serial production back at least a few years. Raw material, energy, and transportation bottlenecks appear to have disrupted military production, just as they did civilian production during this period.

The leadership, either anticipating these problems or in response to them, may have taken steps to stretch out military procurement. Moreover, decisions to comply with SALT I and the unratified SALT II treaty also may have slowed procurement in certain areas.

I should note, however—and it is important to put this defense issue in context—that the costs of current Soviet military activities are very large, about 45 percent greater than those of the United States. Despite the plateau observed in the level of procurement, Soviet forces have produced some 2,000 ICBM and SLBM missiles, 5,000 tactical combat and interceptor aircraft, 65 SSBN and attack submarines, and some 31 major surface combatants since 1975. Thus, even with reduced growth, they could still introduce many systems and continue to improve their forces throughout this decade. Indeed, we have noted a continuing expansion of Soviet industrial capability associated with the production of weapons, and we also would note the large number of military R&D programs underway, both of which position the Soviets to return to their earlier rates of defense growth, should they overcome some of these other problems.

I would also note that this decline takes place in the context of the overall economic decline and that the rate of spending on defense remains about 13 to 14 percent of gross national product, where it has been for the past decade or more.

<sup>1</sup> See submission (briefing paper) beginning on p. 293.



As the first 2 years of the 1981-85 plan neared completion, it must have become clear to Soviet leaders that their economic strategy was not working. Nonetheless, on the basis of information published in the 1983 plan and what has happened since, we conclude that Andropov is still basically holding to the course set by Brezhnev. In particular, it does not appear that Andropov has accelerated Soviet military spending. There are also no indications of significant change in agricultural policy since Andropov took power. The priority the leadership has given the food program mirrors an apparent high preoccupation with living standards.

#### ANDROPOV INITIATIVES

Aside from its agricultural policies, the new regime has shown concern for the welfare of the population by a flurry of decrees published this year which call for more attention to consumer-related programs. Nevertheless, the regime has very little room for maneuver on consumer issues until the food program pays some return and until more investment can be spared for the production of soft goods and consumer durables.

The major new element of economic policy this year is the discipline campaign. Andropov does not believe that greater discipline alone will cure the economy's ills, but he sees it as a necessary beginning. Although the campaign is designed to tighten discipline all around, it so far appears to be directed primarily against blue-collar workers. In the more sensitive area of reforming planning and management, the new regime has introduced only some very limited measures to decentralize decisionmaking in both industry and agriculture. These are described in some detail in our submission.

#### ECONOMIC PERFORMANCE IN 1983

Turning now to the outlook for 1983, we believe that some of the economic pressures on the Andropov leadership will ease slightly this year. Based on statistics available for the first 7 months of 1983, we estimate the GNP will rise by 3.5 to 4 percent, well above the approximately 2-percent rate of growth achieved in both 1981 and 1982.

All major sectors of the economy are doing better this year. The rebound in industry reflects a comparison with an exceedingly poor first half of 1982. It also owes much to the better-than-normal winter and spring weather conditions which eased transportation blockages and permitted some rebuilding of stocks of fuel and other inputs less in demand when the weather is mild. We estimate that industrial production will grow by about 3 percent this year, somewhat more than the 2½-percent annual rate in 1982.

Following 4 consecutive years of poor agricultural performance a substantial recovery is in the cards for 1983. We expect total farm output to increase by about 7 to 8 percent, compared with slightly more than 3 percent in 1982, and almost no growth in 1981. Barring a major deterioration in weather conditions, a grain harvest of about 200 million tons is likely according to USDA projections, the best crop since the 1978 record crop of 237 million tons. The outlook for the other major crops is also good.

On the other hand, the new regime, which apparently came to power with the support of the military, may well be under pressure to speed up defense spending. Opening the spigot wider would be costly. Any sharp acceleration of the level of military procurement will make it much more difficult for Moscow to solve its general economic problems. Andropov must soon decide how to approach the defense spending and resource allocation issue because the planning cycle for the 1986-90 plan is already underway.

#### LONGER TERM PROSPECTS

A stronger economic showing this year would help Andropov politically but it would not, in our view, foreshadow a higher rate of growth over the longer term. As we say in the submission you have received, the problems that have constrained growth in the late 1970's have not gone away. In fact, some of them are just reaching peak severity.

Most important, because of the slower growth of labor and capital expected in the remainder of the 1980's long-term growth would have to be sustained by increases in the combined productivity of labor and capital. A turnaround in productivity trends is not likely, however, without fundamental change in the economic system and until worker incentives are improved. But the regime's present strategy for spurring efficiency seems unequal to the task.

For example, long cultural conditioning of the work force and the difficulty of reversing trends entrenched for the last 20 years will present substantial obstacles to broad use of increased wage differentials to stimulate productivity. Serious obstacles also stand in the way of continued implementation of the discipline campaign. Public tolerance of a tough discipline drive 30 years after Stalin is likely to be tenuous and transitory. In the current labor market, moreover, management will be reluctant to crack down on workers who can easily quit and find jobs elsewhere, often at higher pay.

#### POSSIBILITIES FOR IMPROVEMENT

The regime could improve the performance of the economy in a number of ways. The current investment plan, for instance, is lopsided and lacks balance, stressing the development of energy and agriculture at the expense of most other sectors vital to economic growth. A greater return could probably be achieved by shifting more investment to sectors such as machine building, transportation, and ferrous metal. In this connection, holding down growth in defense spending would free up resources that could be used to bolster the civilian economy. Some gains could also be achieved by identifying those areas in the economy where mismanagement and administrative inefficiency are worse and replacing the managers at all levels with more competent people.

The greatest potential for reviving economic growth, however, lies in more radical measures that would alter Soviet economic mechanisms. The major constraint, however, in changing the Soviet economic system is that Andropov and the rest of the leadership, for compelling economic and political reasons, will not dismantle a command economy and replace it with some form of market socialism. Given Andropov's emphasis thus far on study

and small-scale experiments, we think that reforms of organization and management will have little impact on the economy in the next years. Indeed, the improved performance in 1983 may even reduce the pressure for economic change in the short run.

#### DEVELOPMENTS IN CHINESE ECONOMY

Now, Mr. Chairman, I would like to conclude my summary remarks with a few observations on recent developments on the Chinese economy.

The Chinese economy today is in much better shape than it was a few years ago. Progress can be seen in the substantial improvements in personal incomes and consumption, in the remarkable growth in agriculture, and in the expansion of foreign trade. There is now a sense of direction and purpose to economic policies. The new Sixth five-year plan for 1981-85, approved last December, provides a reasonably well-defined policy framework, something that had not existed since the 1950's. During the Culture Revolution, 1966 to 1976, China's planning apparatus was dismantled, and plans reportedly consisted of little more than targets for a few important commodities.

In several respects, however, economic progress has proved elusive. The appalling waste and inefficiency that characterized the Chinese economy in the 1970's remains equally serious today. Paradoxically, management reforms designed to reduce waste by strengthening the profit motive and decentralizing financial decisionmaking have also made it more difficult to complete urgently needed projects in bottleneck sectors such as energy and transportation.

Last year the investment plan called for only a nominal increase in capital construction. By the end of the year, actual spending was up over 25 percent. Almost half the increase came from unplanned spending by enterprises financed from retained profits permitted under new government rules. This surge in investment, as in 1980, stretched existing supplies of scarce building materials and made it more difficult to guarantee cement, steel, glass, and the like, to priority projects.

This failure to meet completion targets for critical energy and transport projects is at the center of current policy discussions in Peking. Only slightly less important is how to insure further improvements in living standards and consumption in the face of large investment requirements.

#### PERFORMANCE IN 1982

1982 was fairly typical of recent years. Overall economic growth was at least moderate to good. GNP and industrial production each increased more than 7 percent. Energy production rose by 5.7 percent, easing what is still the major constraint on growth, while agricultural output, benefiting from favorable weather and a continuation of liberal policies, grew by a remarkable 11 percent.

Despite the fact that increases in personal incomes were slightly smaller than in 1981, Peking still had problems providing adequate supplies of consumer goods. Chinese consumers, not finding what they want in the stores, continued to deposit large sums of money

in savings accounts, and inventories of rejected merchandise continued to pile up. The population also was faced with a rise in urban unemployment, which perhaps reached 10 percent, and an inflation rate of between 5 and 10 percent.

At the end of 1982, China was in its strongest international financial position ever. Foreign exchange reserves stood at over \$11 billion, more than double the year earlier total. Most of the increase in reserves, however, came as a result of cuts in imports which fell by 10 percent. With exports growing by over 3 percent, the trade surplus reached \$6.3 billion.

Import cuts also had an impact on Sino-U.S. trade. China continued to run a deficit, although that deficit shrank in 1982. A 21-percent increase in Chinese exports, combined with a 19-percent decline in their imports, reduced China's trade deficit with the United States from \$1.7 billion in 1981 to \$0.6 billion last year. Chinese sales of textiles to the United States were up 34 percent and the purchases of U.S. grain were up 5 percent on a volume basis. A 60-percent decline in imports of textile fibers seems to have been unrelated to the Sino-U.S. textile dispute. It appears instead to have been a matter of the Chinese having excessive inventories of fiber.

#### PERFORMANCE IN 1983

The first half of 1983 has been a continuation of some of the more unwelcome developments of 1982. Investment spending has continued to grow at a 20-percent pace, prodding the regime to review the construction program and to halt or drop lower priority projects. Too rapid growth in heavy industry continues to squeeze consumer goods production. During the first 6 months of this year heavy industrial output rose by 12.2 percent over the year earlier period. The annual target is 3.9 percent. Light industry grew by only 5.4 percent.

#### REFORMS

Earlier I mentioned management reforms. Since the late 1980's China has experimented with management reforms in practically every sector of the economy. The basic thrust has been to decentralize decisionmaking and attempt to boost production and efficiency.

Reforms in agriculture have shown the most striking success. Essentially, these have entailed a reduction of the government's role in production and marketing decisions. Most of these decisions apparently are now made by farm households or by individual farmers. We believe these changes have been very important in agricultural growth since the late 1970's, but—and this is a major complication—Peking also has raised prices for agricultural products. This by itself has probably been a considerable stimulus.

In industry, the reforms have involved strengthening the profit motive and allowing enterprises to retain a portion of their profits. Intuitively, this type of reform is appealing, but because of major irrationalities in China's price system, the changes have not produced the desired effects. The reforms, moreover, have also provid-

ed the funds for enterprises to carry out additional investment, resulting in the overextended construction program mentioned earlier.

In another interesting reform, Peking now permits individuals to open their own businesses, in some instances extending loans and allowing them to hire workers, usually only three or four, who are designated as apprentices. This more liberal stance on individual enterprises has been a very practical one for two reasons: large unemployment and the extreme scarcity of personal service personnel such as barbers and appliance repairmen. On the whole, individual enterprises still are not terribly significant to the Chinese economy, but they have grown rapidly. In 1978, there were only 150,000 individual laborers in urban areas. By the end of 1982, there were 1.5 million. Rapid growth, by any standard.

Other reforms include increased use of domestic bank loans for investment, raising interest rates to allocate investment more rationally, encouraging direct contracts between producer and consumer, allowing some product sales at prices that differ from State-set prices, and providing free markets to allow peasants to sell their produce in urban and rural areas.

The examples I have cited perhaps give you an idea of the type of reforms the Chinese are interested in. At this stage, judging their net impact on economic performance is very difficult. Currently, Peking has adopted a more cautious approach to economic reform. Because there are so many day-to-day problems that demand attention, and because they want to give more thought to the reform program, the Chinese leadership has postponed further major changes in the system until sometime after 1985, the end of the current "Five-Year Plan."

Mr. Chairman, this concludes my summary on both the Soviet and Chinese economies. We would be pleased to take whatever questions you may have.

[The prepared statement of Mr. Gates follows:]

## PREPARED STATEMENT OF ROBERT GATES

## The Soviet Economy

- I. Mr. Chairman, in inviting us to testify on the Soviet economy, you asked that we focus on economic policy changes under the new leadership and the significance of those changes, economic performance in 1982 and thus far in 1983, and the outlook over the next few years. You also requested that we discuss trends in the Soviet Union's allocation of resources to defense.
  - A. Let me start with economic developments in the past two years. Last year and the year before, growth in Soviet gross national product (GNP) averaged about 2 percent per year, somewhat above the level attained during 1979-80 but well below both the rate achieved during the 1970s and the rate implied by the 1981-85 Plan (figure 1).
8. The slowdown in the growth of industrial output was especially worrisome.
  1. In 1981-82, average annual growth was less than 2 1/2 percent, about half the rate called for in the 1981-85 Plan (figure 2).
  2. Two developments during this period were particularly noteworthy: the slowdown was evident in practically every industrial branch, and the productivity of labor and capital employed in industry was down dramatically.

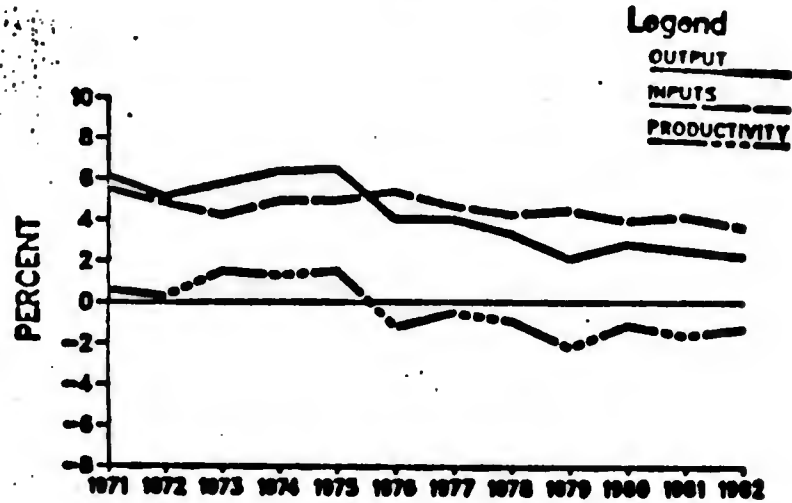
Figure 1

USSR: Average Annual Percentage  
Growth of GNP



Figure 2

## GROWTH IN OUTPUT, INPUTS, AND PRODUCTIVITY IN SOVIET INDUSTRY





- C. Within industry the growth of energy production in the USSR has decelerated significantly.
1. After three decades of growth, oil production in the USSR has begun to level off, although--as I will explain later--the prospects for the future are considerably better than we once thought. Production of oil (including gas condensate) has inched forward during the current five-year planning period and now stands at 12.4 million barrels per day.
  2. While gas output grew rapidly in 1981 and 1982, raw coal output increased in 1982 for the first time since 1978.
  3. Shortfalls in the general availability of raw materials were a major reason for the marked slowdown in industrial production in 1981-82 (figure 3). Declining growth in production of coal and its deteriorating quality, for example, hurt electric power and ferrous metallurgy. Shortages of electric power, in turn, impaired the performance of industrial power customers, and an insufficient supply of steel products contributed to the lower growth in machinery production.
- D. Stagnation in the output of rolled steel products in 1981-82 held back growth in machinery.
1. Machinebuilding is a pivotal sector, producing military hardware as well as consumer durables and machinery for investment.

Figure 3

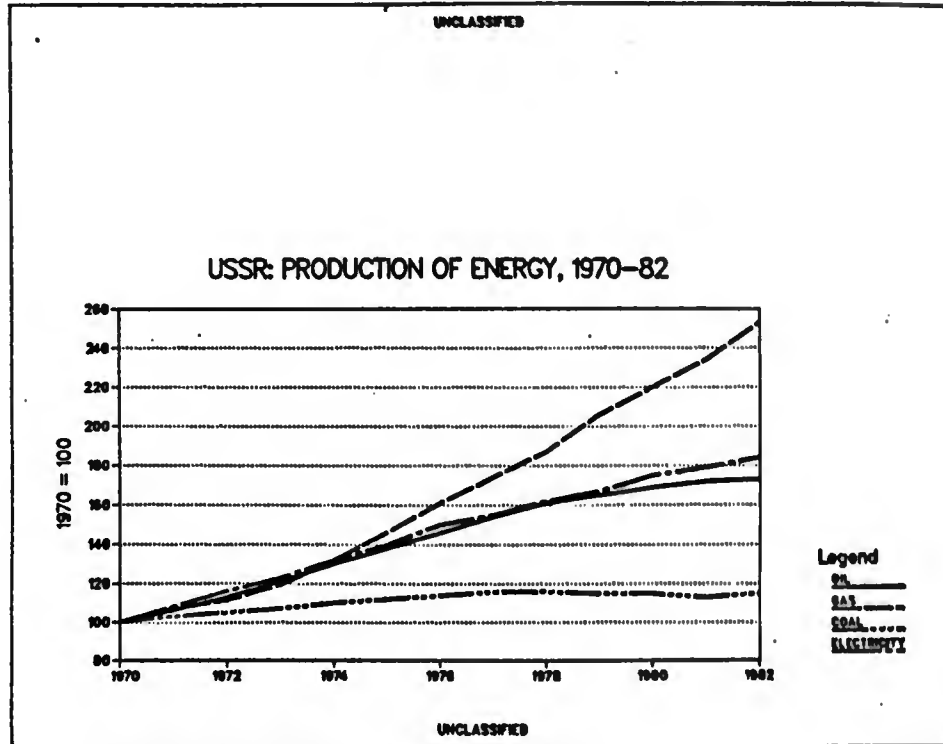
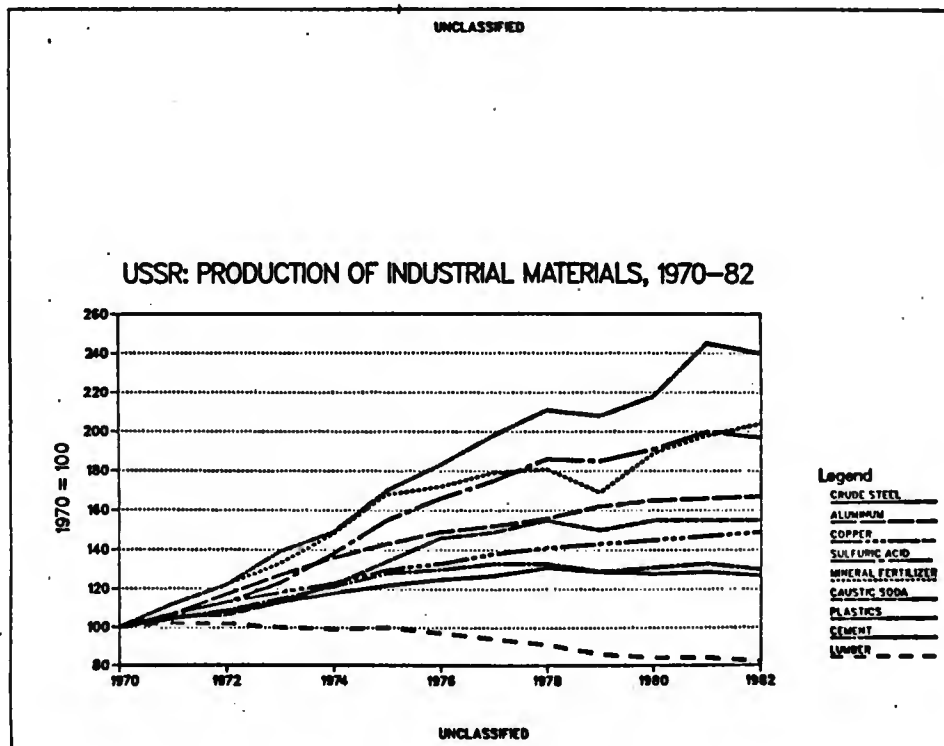


Figure 3 (cont.)



2. The low rate of growth of machinery output--only 3.2 percent annually during 1981-82--is about half the rate planned for 1981-85 and by far the lowest since World War II.
  3. The hard choices on resource allocation facing Andropov are most evident in the this sector. At current levels of investment, demand for machinery and equipment for domestic investment is rising by as much as 7-9 percent per year.
  4. Meanwhile, the regime would like to push production of consumer durables so as to reduce some of the unsatisfied demand in consumer markets.
  5. But the 3-percent average annual growth achieved in 1981-82 suggests that the goals for total production of machinery are unlikely to be met in the near future.
  6. The pressure on allocations to investment and the consumer could be eased in the near term in two ways: by holding down the growth in production of military hardware and by increasing net imports of machinery. In the longer term, more investment in the machinery sector and its supporting branches is needed.
- E. The growth of output in light industry and food processing during 1981-82 paralleled that of industry as a whole.
1. Despite large imports of grain, sugar, and other farm

products, shortages of agricultural raw materials contributed to the weak performance of food processing and (to a much lesser extent) of light industry in 1981-82.

F. The value of agricultural output, almost the same in 1981 as in 1980, increased by somewhat more than 3 percent in 1982. USDA estimates grain production at 180 million tons last year--an increase of 20 million tons over 1981 but some 55 million tons short of plan.

1. In the crucial livestock sector, meat output rose only fractionally in 1982 while milk production turned upward for the first time since 1977.
2. Even with the 1982 rebound, farm output was still nearly 7 percent below the 1978 peak-year level. In fact, the results for 1981-82 have put most of the 11th Five-Year Plan agricultural production goals beyond reach.

G. A substantial share of the responsibility for the falloff in industrial growth must be assigned to bottlenecks in the transportation of both raw materials and finished products.

1. Plants were shut down intermittently, production lines were disrupted as machines and workers stood idle for lack of raw materials, and finished products piled up on loading docks,
2. Total freight turnover, which had increased at an annual rate of 3.5 percent during 1976-80, actually

fell slightly last year.

3. The principal culprit has been the railroads, which shoulder the major part of the transportation burden in the USSR.
- H. As Andropov noted in his early speeches, much remained to be done in the area of consumer welfare when he took office.
1. According to our estimates, total per capita consumption increased in 1981 by about one percent--but then declined in 1982 by almost one percent.
  2. Meanwhile, the availability of quality foods declined generally. Per capita meat consumption, for instance, was down slightly in 1982 from its peak 1979 level.
  3. Some signs of unrest--such as short-lived work stoppages--occurred during 1981-82, but expressions of discontent generally were contained or averted. Faced with long lines at state outlets, consumers dealt with the shortages in ways that did not threaten the regime--by buying higher-priced foods in the officially sanctioned free markets, for example, and through barter and black-market activity.
1. After coping successfully with an earlier runup of hard currency debt, the USSR was hit in 1981 by a rising agricultural import bill and the need to provide hard currency assistance to Poland.
  1. The volume of grain purchases jumped by more than

one-third, to 39 million tons. The deficit on merchandise trade rose to \$4 billion, compared with \$2.5 billion in 1980.

2. The gap would have been even higher had Moscow not pushed exports (mainly oil) and trimmed imports (mainly machinery and equipment) in the last half of 1981.
3. The Soviets improved their hard currency payments position in 1982. By strongly pushing oil exports and holding down imports, the USSR slashed its hard currency trade deficit to \$1.3 billion, or one-third of the deficit incurred in 1981.
4. The easing of its hard currency payments position, coupled with a probable fall in hard currency assistance to Poland, allowed Moscow to reduce its hard currency debt in 1982. By the end of the year, gross debt had fallen by an estimated \$800 million and totaled \$20.1 billion. Assets in Western banks were a record-high \$10 billion at the end of last year.

II. Mr. Chairman, I have just reviewed the general performance of the Soviet economy during the last two years. Let me now turn to the particular issue of Soviet military expenditures. Our approach to defense-spending estimates yields much more confidence in medium- and long-term trends than year-to-year movements. Consequently, I will discuss our estimates for the period since 1970.

- A. Our latest estimate of Soviet military expenditures indicates that defense spending in constant 1970 ruble prices continues to increase.
1. Unlike our past estimates, however, the new evidence incorporated in our present estimate indicates that Soviet expenditures have leveled off since 1976 in at least one major area, procurement of military hardware.
  2. Total Soviet defense costs, measured in constant 1970 rubles, grew at an average annual rate of 4-5 percent during 1966-76 (about the same as reported in earlier estimates).
  3. Our new estimate, however, shows that like overall economic growth the rise in the total cost of defense since 1976 has been slower--about 2 percent a year.
  4. The rate of growth of overall defense costs is lower because procurement of military hardware--the largest category of defense spending--was almost flat in 1976-81.
- B. New information indicates that the Soviets did not field weapons as rapidly after 1976 as before.
1. Practically all major categories of Soviet weapons were affected--missiles, aircraft, and ships. This phenomenon was only partially offset by the tendency of newer, more sophisticated weapon systems to cost more.
  2. Costs in all other categories of Soviet defense



continued to grow at historic rates over the entire 1972-81 period. Operations and maintenance costs, for example, grew by 3-4 percent annually; personnel costs increased by slightly less than 2 percent a year.

3. Meanwhile, the burden of defense in the USSR--the share of GNP devoted to defense--remained roughly constant at 13-14 percent through the 1970s because defense and GNP have grown at about the same rate. We had previously forecast that the defense share would increase by one-percentage point in the early 1980s.

C. The slowdown in the growth of military procurement cannot be explained by any single factor.

1. Initially at least, the absence of growth in military procurement might have been attributed to natural lulls in production as older weapon programs were phased out before new ones began. The extended nature of the slowdown, however, goes far beyond normal dips in procurement cycles, which usually have lasted no more than a year or so.

2. The continued slow growth since the late 1970s seems instead related to a combination of complex factors including technological problems, industrial bottlenecks, and policy decisions:

- a. A number of major Soviet weapons ran may have run into technical delays that pushed their serial

production back at least a few years.

- b. Raw material, energy, and transportation bottlenecks could have disrupted military production just as they did civilian production during this period.
- c. The leadership, either anticipating these problems or in response to them, may have taken steps to stretch out military procurement.
- d. Decisions to comply with SALT I and the unratified SALT II treaty also may have slowed the pace of procurement in certain areas.

III. The sluggish performance of the Soviet economy in 1981-82 partly reflected circumstances that were beyond the leadership's control. It stemmed mainly, however, from resource allocation decisions made earlier and from long standing flaws in the USSR's system of planning and administration.

A. First, I will list briefly some of the external factors bearing on the economy.

- 1. Poor weather, drought in particular, continued to plague the farm sector during 1981-82 as the USSR suffered its third and fourth consecutive poor grain harvests.
- 2. To a lesser extent, harsh weather also hindered construction, transportation, and industry, especially the production of electric power--a input critical to all sectors of the economy.

3. Economic performance was affected also by a reduction in the number of people entering the labor force. Increments to the working-age population have been declining since the mid-1970s because of the lower birth rates of the 1960s, an increase in the number of workers reaching retirement age, and a rising mortality rate among males in the 25-to-44 age range.
  4. A third factor beyond the leadership's control was the continued escalation of the cost of extracting, refining, and transporting fuels and raw materials. Even though the Soviet Union is endowed with enormous quantities and a wide variety of raw materials, these materials in many instances have become increasingly inaccessible and the cost of exploiting them has risen sharply.
- B. Some of the difficulties of the Soviet economy in 1981-82 were the result of deliberate policy choices. At a time when investment needs were rising rapidly, the 1981-85 Plan called for investment spending to grow by less than 2 percent per year.
1. The marked slowdown, while partly forced upon the leadership by production constraints in the capital goods industries, also reflects a conscious attempt to switch to a more intensive pattern of growth--that is, growth through more efficient use of resources and more rapid technological progress.
  2. But the assumption that slower growth in investment

and is consistent with rising productivity did not prove out. Capital productivity in industry continued to decline at the same annual rate of 4 to 5 percent experienced in the last half of the 1970s.

3. Soviet planners also have made costly errors in allocating investment resources.
  - a. In some cases, investment in large-scale capacities for improving the quality of raw materials such as iron ore has been emphasized at the cost of modernizing capacities for finished products.
  - b. In other cases the planners have increased the Soviet capacity for manufacturing intermediate and finished products while neglecting to develop the raw material supplies essential to ensuring full use of that capacity.

C. Underlying all of the other factors tending to brake economic growth is the Soviet system of planning.

Economic planning and management are highly centralized, with key resources allocated by administrative fiat.

1. As the economy has grown in size and complexity, it has become more difficult to manage. Moreover, as in previous plans, many of the key 1981-85 goals are unrealistic, based on projected productivity increases that cannot possibly be met.
2. The result is to intensify the pressure on lower level managers to protect themselves through such

practices as the hoarding of material and labor resources--and thus to aggravate already serious bottlenecks.

IV. As the first two years of the 1981-85 Plan neared completion, it must have become clear to Soviet leaders that their economic strategy was not working. Nonetheless, on the basis of information published on the 1983 plan and what has happened since, we conclude that Andropov is still holding mainly to the course set by Brezhnev. The possible exception is investment policy.

A. Because capital formation is so important in determining the directions of economic development, investment plans provide particularly useful clues to Soviet economic policy.

1. The investment policy laid down in the 1981-85 Plan called for the lowest rate of investment growth in the post-World War II era--about  $1\frac{1}{2}$  percent per year on average.
2. Investment was scheduled to rise by nearly  $2\frac{1}{2}$  percent in 1983, slightly above plan. But results for the first six months indicate that investment may be growing at a much faster rate. Incomplete returns indicate that investment increased by 6 percent compared with first half 1982.
3. The step-up in investment could signify a change in economic policy.
  - a. Indeed, the premise that increases in

productivity required by the 1981-85 Plan are compatible with a slowing rate of investment has been challenged vigorously in the Soviet Union over the last two years.

- b. The sharp increase in investment growth in first-half 1983 could mean that the proponents of higher investment spending are winning out.

B. Andropov's position on the share of resources that should go to the military is unclear.

1. In his November 1982 plenum speech, he stated only that "defense requirements as usual have been sufficiently taken into account." During a highly-publicized visit to a Moscow machine-tool factory, however, he implied that a healthy economy is a precondition of military power--suggesting that defense could no longer count on retaining unquestionable priority in the distribution of resources.
2. The little evidence that is available indicates Andropov has not accelerated Soviet military spending. For example, the leveling off of weapons procurement in recent years has been accompanied by an increase in the share of machinery allotted to civilian uses. That trend, as noted above, appears to have continued in both 1982 and 1983.
3. While we cannot be sure what Andropov's policy is, or will be, Soviet military capabilities will still

increase substantially over the next several years even if procurement of military hardware does not increase.

- a. The USSR is already investing so much in military hardware that merely continuing procurement at the existing level would provide very large annual increments in holdings of military equipment. With level procurement, the Soviets, for example, have added substantial quantities of strategic and conventional weapon systems.
  - b. To put it another way, defense programs show that despite somewhat slower growth in recent years the costs of Soviet defense activities still exceed those of the United States by a large margin. In 1981 the dollar costs of Soviet defense activities were 45 percent greater than US outlays; procurement costs alone were also 45 percent larger.
- C. There also are no indications of significant change in agricultural policy since Andropov took power.
1. Plans for crop production in 1983 have been set largely at the levels indicated originally in the 11th Five-Year Plan, and the General Secretary also appears to have thrown his full support to Brezhnev's Food Program.
  2. Mikhail Gorbachev, the Soviet agricultural czar, has been lobbying hard for the more rapid and effective

implementation of the part of the program dealing with structural reorganization, which has been resisted by the ministries and state committees involved.

3. Andropov's support of the Food Program is also indicated by the continued large share of investment allocated to agriculture and the sectors supporting it in 1983--almost one-third.

D. The priority the leadership has given the Food Program mirrors an apparent high-level preoccupation with living standards. Judging from Soviet press reporting on Politburo meetings, for instance, the Andropov government has devoted more time to agriculture than any other domestic issue.

1. Aside from its agricultural policies, the new regime has shown concern for the welfare of the population by a flurry of decrees has been published this year calling for more attention to consumer-related programs.
2. The regime is also continuing the campaign initiated under Brezhnev to increase the production of consumer goods in heavy industry and may intend to import more machinery for use in consumer industries.
3. Nevertheless, the regime has little room for maneuver on consumer issues until the Food Program pays some return and until more investment can be spared for the production of soft goods and consumer durables.



4. In his June plenum speech, in fact, Andropov stressed that improvement in the standard of living will be slow. Increases in income, he has maintained on several occasions, must be closely linked to increases in labor productivity.
- E. The foreign trade plan for 1983 suggests that Moscow still is bent on increasing trade with its Warsaw Pact partners and other Communist countries at the expense of trade with the West.
1. Eastern Europe, however, has reason to be suspicious of the renewed emphasis on intra-CEMA ties. The Soviets have already reduced oil exports to Eastern Europe, and it is unlikely that Soviet shipments of oil or other raw materials will increase in the future. Eastern Europe may also believe that, given the USSR's own economic problems, Soviet assistance--for example, credits in the form of large trade surpluses--will diminish.
  2. The East Europeans--facing critical economic and financial problems of their own--will be neither willing nor able to provide the USSR much assistance in providing substitutes for imports from the West.
  3. On the other hand, Moscow may be more willing now than in the past to squeeze Eastern Europe. Martial law appears to have controlled civil unrest in Poland, and there has been little overt discontent in any of the other East European countries despite

harder economic times.

F. The major new element of economic policy this year is the discipline campaign.

1. Andropov does not believe that greater discipline alone will cure the economy's ills, but he sees it as a necessary beginning. He apparently is confident that coercion or the threat of coercion can increase worker discipline and that greater discipline will raise productivity.
2. The campaign is designed to tighten discipline all around, including management discipline. Andropov has, in fact, fired some allegedly corrupt or incompetent officials.
3. To date, however, the campaign appears to have been directed primarily against blue-collar workers. In particular, the regime has sought to compel workers to put in a full day's work.
4. Another phase in the campaign was introduced this August. A new decree introduced sanctions (loss of vacation, loss of pay, and even dismissal) against workers AWOL or drunk on the job and offered financial rewards to more productive laborers. Judging from leadership statements, additional measures to reinforce labor's commitment to better job performance are likely to be forthcoming.

G. In the more ideological sensitive area of reforming the planning and management of the economy, the new regime

has introduced some limited measures designed to decentralize decisionmaking in both industry and agriculture.

1. A mid-July joint party-government decree is the most comprehensive step in this direction to date. This "economic experiment" involves five industrial ministries and will begin in January 1984. The decree gives enterprise management more latitude in using investment and wage funds, largely in an effort to spur technological change and innovation. It also ties worker and management benefits more closely to enterprise performance, with contract fulfillment as a key success indicator.
2. Andropov's endorsement of small labor teams in industry and agriculture also qualifies as an attempt to increase local initiative in the decisionmaking process, this time at the lowest production level. The brigade organization of industrial labor and collective contract system for farm workers allows the enterprises increased flexibility but at the same time make profits and wages more dependent upon final results.

V. Turning now to the outlook for 1983, we believe that some of the economic pressures on the Andropov leadership should ease slightly this year.

- A. Based on statistics available for the first seven months of 1983, we estimate that GNP will rise by 3.5 to 4

percent--well above the approximately 2-percent rate of growth achieved in both 1981 and 1982 and close to the 4-percent annual rate of growth implicit in the 1981-85 Plan.

1. All major sectors of the economy are doing better this year. After several years of steady decline, for example, industrial performance has begun to improve. Industrial production was almost 4 percent higher in the first seven months of 1983 than in the comparable period of 1982.
2. The rebound in industry probably owes much to the better than normal winter and spring weather conditions, which permitted some rebuilding of stocks of fuels and other inputs less in demand when the weather is mild. Most important, better weather appears to have eased transportation difficulties, thus relieving bottlenecks generally.
3. Other factors that have contributed to improved industrial performance include recent additions to capacity, notably in steel and chemicals; managerial personnel changes; and perhaps greater effort reflecting a sense that, with the change of leadership, a period of drift had ended.
4. In this connection, the discipline campaign probably played a part in the recovery from the poor performance of 1981-82.

B. On balance, however, the role of the Andropov

administration in the industrial recovery seems to be minor. The production gains reported thus far reflect in large part recovery from the poor performance at the beginning of 1982.

1. Output of most industrial commodities actually began to pick up on a seasonally-adjusted basis in mid-1982, so that the overall contrast between the two years will not be so favorable to 1983 by yearend (figure 4).
2. We estimate that industrial production will grow about 3 percent this year, somewhat higher than the  $2\frac{1}{2}$  percent annual rate of growth achieved in 1981-82. Under Andropov, industrial production has returned to the growth path characteristic of 1978-82, not to the higher rates of earlier periods.

C. Following four consecutive years of poor agricultural performance a substantial recovery is in the cards for Soviet agriculture in 1983.

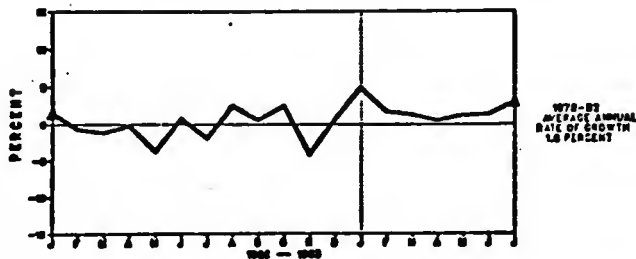
1. We expect total farm output to increase by about 7-8 percent compared with somewhat more than 3 percent in 1982 and almost no growth in 1981.
2. Barring a major deterioration in weather conditions, according to USDA, a grain harvest of 200 million tons is likely, the best crop since the 1978 record of 237 million tons. The outlook for other major crops is also good.

D. The new trend we have observed in military procurement,

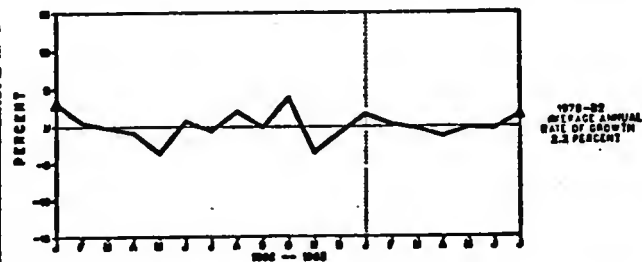
Figure 4

USSR: Deviation of Industrial Production  
From Recent Trend\*

Civilian Industry



Fuels and Power



Industrial Materials

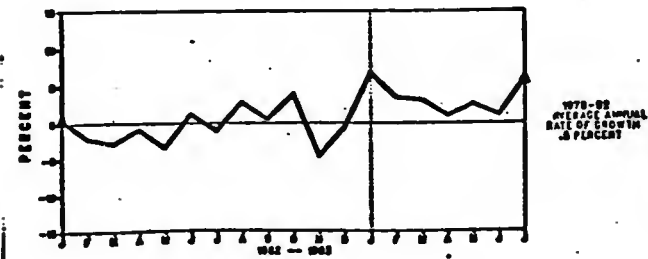
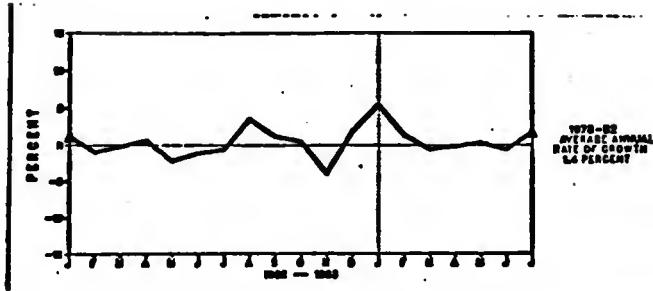
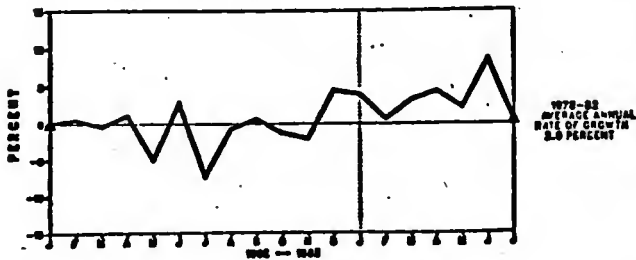


Figure 4 (cont.)

## Civilian Machinery



## Consumer Goods



\* The monthly production indexes are calculated from a smaller sample of commodities than those represented in the annual production indexes. The average trend rate of growth shown for 1978-82 in this figure will therefore differ from those based on full-year data. Nevertheless, we believe that the samples used in extending the monthly indexes are comprehensive enough to signal changes in growth rates over time, or--as in this figure--to compare performance pre-Andropov and post-Andropov.

together with continuing domestic economic problems and the recent political succession, does raise important questions about the future of the Soviet defense effort.

1. We previously had estimated that defense spending would continue to grow in real terms through at least 1985.
2. We still consider that likely. The question is whether the Soviets will rebound from the procurement slowdown, so that defense spending will return to (or even exceed) the 4 to 5 -percent average annual growth rate of 1966-76, or whether much slower growth in procurement will slow the increase in overall expenditures for some time.
3. Because we do not fully understand the causes of the slowdown, we cannot provide a reliable answer.

E. The new regime, which apparently came to power with the support of the military, may well be under pressure to speed up defense spending to counter a resurgent Western military effort.

1. If a decision has been or is being made to open the defense spigot wider at the cost of squeezing civilian investment programs and the consumer, the Soviets can quickly increase the procurement of hardware already in production.
2. It would take time, however, for them to overcome the technical and manufacturing problems associated with the development of new weapon systems. As I said



earlier, these problems apparently have contributed to the recent procurement slowdown; some appear pervasive and will be difficult to correct.

3. Opening the spigot wider would also be costly. Any sharp acceleration of the level of military procurement will make it much more difficult for Moscow to solve its general economic problems and could over the long run erode the economic base of the military-industrial complex.
4. What is certain is that Andropov must soon decide how to approach the defense spending and resource allocation issue. The planning cycle for the 1986-90 Plan is already under way; Andropov has alluded to it a number of times in his recent speeches.

VI. A stronger economic showing this year would help Andropov politically, but it would not--in our view--foreshadow a higher growth rate over the longer term. The problems that have constrained growth since the late 1970s have not gone away; some of them, in fact, are just now reaching peak severity.

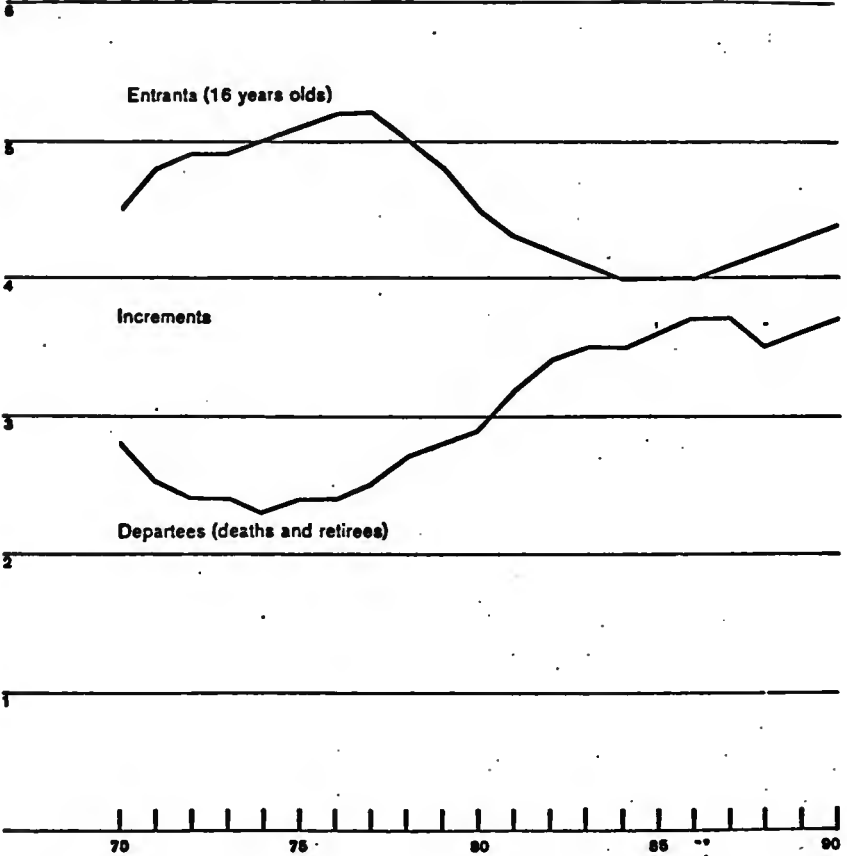
A. For example, the increment to the working age population--about 389,000 persons--will be lower this year than at any time in the last two decades (figure 5) and will continue to diminish through 1986.

1. Growth of the Soviet capital stock also will slow during the 1980s because of the slowdown in investment that has occurred since 1975.

Figure 5

**USSR: Increments to the Working Age Population  
(Males 16-59, Females 16-54)**

Million Persons



2. Given the slower growth of labor and capital in the 1980s, long term growth would have to be sustained by increases in the combined productivity of labor and capital. A turnaround in productivity trends is not likely, however, without fundamental change in the economic system and until worker incentives are improved.
- B. In addition, many of the unfavorable developments that have converged to slow industrial growth will continue to do so during the rest of 1980s. Because planned investment will be inadequate to add capacities needed for planned growth in output--especially in the extractive branches where both depletion rates and investment costs will continue to rise rapidly--shortages of raw materials and a deterioration in the quality of many materials are likely to continue.
- C. In agriculture, Andropov faces the same problems as Brezhnev in improving agricultural efficiency: bureaucratic resistance to changes in organization, weak incentives for farm workers, insufficient skills in the farm labor force to manage production and to use and maintain machinery properly, and a lack of sufficient infrastructure (roads, storage areas and the like) in rural areas.
1. The greatest impediment, however, remains the failure to allow farms more freedom to make decisions at the local level about the composition of output and about

planting and harvesting schedules.

2. Thus, we estimate that, although Moscow is placing increasing emphasis on agricultural self-sufficiency, imports of 20-30 million tons of grain and 2-3 million tons of oilseeds and oilseed meal will be needed annually to support livestock expansion plans during the next several years, even with normal harvests.

D. On the other hand, we believe that the Soviet energy situation will not seriously constrain economic growth during the 1980s. This judgment is based on our latest study of the Soviet oil industry and our resulting reassessment of Soviet energy prospects into the 1990s. The principal conclusions of these two studies are as follows:

1. The combined output of oil, natural gas, and coal will increase by 10 to 12 percent in 1981-85 compared with the 17 percent planned for this period and the 22 percent achieved in 1976-80. In the latter half of the decade energy production will be about 6 percent greater than in 1981-85.
2. The Soviet Union has thus far averted the downturn in oil production that CIA had earlier predicted by virtue of an enormous development effort that has tapped a petroleum reserve base larger in size than we previously believed. The cost of doing this has been high, but we think that the Soviets have already

allocated enough investment resources to the oil industry to permit them to come close to their production target of 12.6 million b/d by 1985.

3. Because Moscow is likely to continue to increase the total amount of economic resources going to the oil industry during the 1986-90 Plan but at a slower rate, oil production probably will plateau by the middle of this decade and subsequently decline slowly to between 11 and 12 million b/d by 1990.
4. Meanwhile, assuming careful domestic fuel management, scheduled deliveries of gas to Western Europe through the new export pipeline, and continued pressure on other CEMA countries to reduce their dependence on Soviet oil, total unconstrained demand for Soviet oil should continue to hover between 12 and 13 million b/d through the rest of the 1980s.
5. All things considered, the energy picture implies a slight constraint on growth of the domestic economy, and, under a low scenario of energy output, reduced hard currency earnings as well.

E. The regime's present strategy for spurring efficiency to overcome the negative trends in the economy seems unequal to the task. In his public statements, for example, Andropov has harshly attacked the long-time practice of wage leveling because it conflicts with the priority the regime has assigned to raising labor productivity.

1. But long cultural conditioning in the work force and

the difficulty of reversing trends entrenched for the last 20 years will present substantial obstacles to broad use of increased wage differentials.

2. Serious obstacles also stand in the way of continued implementation of the discipline campaign. Public tolerance of a tough discipline drive 30 years after Stalin is likely to be tenuous and transitory. In the current labor market, moreover, management will be reluctant to crack down on workers, who can easily quit and find jobs elsewhere, often at higher pay. Firing workers also goes against the grain of Soviet doctrine, which guarantees a right to a job.

F. In our judgment, the regime will not be able to rely substantially on increased imports to relieve resource pressures in the domestic economy during this decade.

1. Our projections indicate that--barring another round of spiraling oil prices--Soviet hard currency purchasing power will not rise significantly through 1990. Consequently the USSR will have difficulty financing more than modest growth in hard currency imports unless it is willing to accept a sharp increase in its debt.
2. Western credits are one--and a relatively immediate--means of financing additional hard currency imports. But Soviet debt management policy would first have to become less conservative, and Western governments would probably have to provide

significantly greater encouragement and guarantees to Western banks.

3. Nor will the Soviets be able to go much further in reducing net exports to Eastern Europe. Most East European countries are struggling to sustain some positive growth in GNP while putting their hard currency balances in order.

G. The regime could improve the performance of the economy in a number of ways.

1. Some investment resources, for instance, could be redirected to sectors where their payoff is greater than at the present time. The current investment plan is lopsided and lacks balance; it stresses development of energy and agriculture at the expense of other sectors also vital to economic growth.
2. A greater return could probably be achieved by shifting more investment to such sectors as machinebuilding, transportation, and ferrous metals. Finally, holding down growth in defense spending would free up resources that could be used to bolster the civilian economy.
3. Some gains could be achieved also by identifying those areas in the economy where mismanagement and administrative efficiency are worst and replacing the managers responsible at all levels with more competent people. Indeed, Andropov has brought in a somewhat more innovative and more disciplined set of

officials to various sectors of the economy.

H. The greatest potential for reviving economic growth, however, lies in more "radical" measures that would alter Soviet economic mechanisms. Indeed, unless the system changes to promote innovation or managerial initiative, a new generation of administrators would probably fall back into the practices of their predecessors.

1. While we believe that caution and conservatism characterize Andropov's approach to economic change, we cannot rule out the possibility that he might yet introduce more innovative economic programs.
2. Andropov's freedom of action in his first year as General Secretary probably has been restricted. He is bound by an annual economic plan made before Brezhnev's death and he is still much indebted to those who helped elevate him to power.

1. The major constraint, however, in changing the Soviet economic system is that Andropov and the rest of the leadership--for compelling cultural, economic, and political reasons--will not dismantle the command economy and replace it with some form of market socialism.

1. A planned economy is all Soviet leaders have ever known. They do not understand the economic rationale for markets and believe that, however efficiently markets may operate at the enterprise level, they necessarily produce chaotic results on a economy-wide scale.



2. Consequently, Andropov is likely to rely primarily on Brezhnev's legacy of programs and proposals for change worked out between 1978 and 1982.
  3. We are likely to see an increase in the number and variety of reform proposals like the recently-announced economic experiment. In his 15 August speech, Andropov said that changes would be made before the start of the 1986-90 Plan but that they would be undertaken carefully and only after unhurried evaluation of large scale experiments. In addition, a high level committee under the leadership of new Central Committee Secretary Nikolay Ryzhkov was formed earlier this year to review the party's options for changing the economic system and given a year or more to report back.
  4. Given the emphasis on study and small-scale experiments, we think that reforms of organization and management will have little impact on the economy during the next few years. Indeed, the improved performance in 1983 may even reduce the pressure for economic change in the short run.
- J. As we stressed in last December's testimony, however--and as a prospective growth rate of about 2 percent a year implies--the Soviet economy remains viable. Furthermore, the strains on that economy may be somewhat less severe than we thought a year ago.
1. First, the outlook for oil production looks less unfavorable. To recapitulate, we now expect that production will hold roughly steady through the mid-1980s and then will fall only gradually through 1990.
  2. Second, we have revised downward our estimates of how fast defense spending has been growing, implying greater availability of resources for other uses than we had estimated earlier.

Senator PROXMIRE. Thank you very much, Chairman Gates.

#### RELIABILITY OF SOVIET STATISTICS

Chairman Gates, I would like to ask a rather basic question before getting into the substance of your testimony.

The renewal of Soviet growth this year comes at a conspicuously convenient time for the leadership of the Soviet Union. After all, they have got a new leadership. They want to show they are doing well. China's economy has rebounded somewhat, and they are competing in the Communist world with China. It would not look good if they had a new leadership and they had no growth or little growth, whereas China was moving ahead so rapidly.

The United States is in a strong recovery. What I am getting at is the possibility of having figures cooked. I have been always suspicious of figures being cooked in this country. I do not think they are, because I have gone into this in considerable detail. It would be very hard to do it and very long. But in a Communist totalitarian dictatorship, it seems to me that cooking the figures is much, much easier than it would be in our system. We have a probing press and Congress and so forth.

Does the intelligence community have a way of verifying official Soviet economic statistics, or are you dependent for your knowledge about the Soviet economic performance on what they tell us? And if so, is there any possibility that the current surge is the result of statistical manipulation? Could this be a Potemkin economy?

Mr. GATES. Mr. Chairman, let me make a couple of general observations and then ask Mr. Noren to address the issue of the validity of the statistics that we use. It strikes me that the improvement in the performance of the Soviet economy is consistent with a couple of developments that would have been very difficult for the Soviets to invent.

It stands to reason that the Soviet economy would show some improvement, in part due to the impact of good weather on agriculture, and second, the effect of a mild winter last winter. There is no question but what the good weather and good luck have permitted the Soviets to have better than usual harvest this year, for example. By the same token, as mentioned in the testimony, a mild winter alleviated certain problems in the transportation sector, it allowed the Soviets to overcome some energy scarcity problems that they had in the preceding couple of years. So I think that those two aspects are fairly fundamental and underscore, as anyone in political life appreciates, the importance of luck.

The other consideration that I would point out is the value of the symbolism of a new leadership itself and the very tough approach that Andropov has taken on the discipline. He clearly has had an impact at a number of different levels. We do not think it is one that can be sustained, but I do not think anyone at this table doubts that there have been some real short-term benefits from the application of the discipline campaign, in terms of both people both working harder, and in terms of being at the workplace and putting forth full effort.

But with those general comments, let me ask—

## CAUSES OF IMPROVED PERFORMANCE

Senator PROXMIRE. Before you yield, let me ask you, how much of this improvement—what proportion is the result of good weather, good crops? I understood you to say something about a 3-percent improvement. Was that 1982?

Mr. GATES. Jim.

Mr. NOREN. The improvement is from 2-percent growth in GNP in 1982. We expect GNP to grow by 3½ percent to 4 percent this year.

Senator PROXMIRE. I am talking about strictly the improvement in the crop performance.

Mr. NOREN. All right, as for agricultural output, we expect it to increase about 7 percent, 8 percent this year.

Senator PROXMIRE. 7 or 8 percent, I see.

Mr. NOREN. Insofar as we could allocate the reasons for the increase in GNP, the effect of higher agricultural production probably would be in the range of three-fourths of the—

Senator PROXMIRE. Three-fourths of the GNP was a result of the improved crops, better weather, and so forth?

Mr. NOREN. The increase in agricultural production—the 6 or 7 percent—would be the result of much better weather.

Senator PROXMIRE. And about 25 percent or one-fourth, the result of rhetoric and—

Mr. NOREN. Rhetoric, the Andropov initiatives.

Senator PROXMIRE. It is hard to understand that. It really is. You know, we are always asking people to work harder and so forth. That is kind of routine, is it not, in the Soviet Union, too? Do they not have—whether it is Brezhnev, or whoever it is, saying: "Come on, fellows you have got to work harder. We want more discipline. Come to work every day. Do not report drunk," and so forth. They have been singing that song year after year, and why should it get such results in 1982?

Mr. NOREN. I think the difference is that, as you say, Brezhnev had been singing that song in the latter part of his administration. But when Andropov came in, he did something about it. He had the militia checking the stores, checking the movie houses, driving people out. He had the supervisors in the factories made responsible if people under their employ were not at work. Then, I think within a relatively few months, late December, January, February, that approach was thoroughly disseminated.

Senator PROXMIRE. What do they do if somebody is not at work, they are absent? In this country, I presume they just get docked pay for that day. Is that what they do there too?

Mr. NOREN. They dock the pay, and under some of the supplementary measures that they have introduced, you can take away some of their privileges, one of them being the length of their vacation, the admission to certain resorts, the right to change jobs. If someone has been absent, they can now deny him the right to change jobs for a period of 6 months.

## LABOR MOBILITY

Senator PROXMIRE. I want to ask you gentlemen about that. You said that in the current labor market—this kind of surprised me—it did not shock me exactly, but it surprised me. You said in the current labor market in the Soviet Union managers would be re-

luctant to crack down on worker discipline, because workers can easily quit and find jobs elsewhere, often at higher pay.

That is something that I did not appreciate. I did not realize they had that freedom of movement and job mobility. Do workers have that in the Soviet Union? Can they just quit jobs and find them elsewhere at will, or are they restricted in where they can go and the type of job they can change.

Mr. NOREN. Up to several months ago, it was a common practice to quit a job and find a better one. The enterprise hiring a new worker was eager to have him. What the Andropov administration is trying to do is to introduce some barriers to this movement, mainly through requiring someone to stay on the job for 6 months and also by penalizing enterprises that try to pirate workers away from other enterprises.

#### CHINESE UNEMPLOYMENT

Senator PROXMIRE. Now I notice in your—I am going to largely question in this round or the next couple of rounds on the Soviet Union but I—because this relates also to the Chinese situation—I wonder if you could explain to me about this urban Chinese unemployment being as high as 10 percent in the cities. That just seems to be a contradiction of Marxist doctrine, dogma, practice, and everything we had been led to expect about Communist economies. They just did not have unemployment. An unemployment of 10 percent, I think you said in your presentation.

Mr. PHILLIPS. Mr. Chairman, setting a figure, a rate on Chinese unemployment is difficult at best. The Chinese have talked about figures of 4, 5, 6, 7, or 8 percent. They do not refer to it as unemployment. They refer to it as people who are awaiting jobs. There is no term "unemployment," except in some academic essays there. But we feel that, in spite of the fact that the regime in the past 4 or 5 years has done a lot to pick up the backlog of the previous 10 or 15 years, people that had floated into cities, some illegally, some legally—in spite of the fact that they have done a lot to pick up this backlog, there still is a substantial group of people in urban areas who are unemployed. Some of them are in the cities illegally. Some of them are—some of them are waiting until their job assignment comes up. They may have graduated from school this year, but they are not going to be given jobs until next year or the year after. The problem is not serious at the moment, in that we feel that it is still under control.

The idea of setting a 10-percent figure is that this is about the highest of the ranges that the Chinese have mentioned, when they talk about people still awaiting jobs in urban areas.

Senator PROXMIRE. Can you give us any idea of what it would be for the—of course, China is so colossal with 1 billion people. Can you give us some notion of what their overall economic—I mean, unemployment figure would be compared to ours?

Mr. PHILLIPS. A rule of thumb is that 300 million people are employed in the agricultural labor force, another 100 million in non-agricultural jobs. If 100 million are in urban areas and the unemployment rate is running to about 10 percent, then you are talking about 9 million, 10 million young people.

Senator PROXMIRE. They have 300 million, three-fourths of their people in what you call the agricultural labor force?

Mr. PHILLIPS. There are about 850 million people of the 1 billion people living in rural areas, and of those 850 million about 300 to 350 millions, somewhere in that range, are employed in agricultural-related activity in rural areas. There are another 100 million people employed in nonagricultural activities, for all practical purposes, urban employment.

So when we say 10 percent, we are talking about 10 percent of 100 million people.

If your question was, how many people are we talking about being unemployed in urban areas, the figure would be 9 million, to 10 million people.

Was that your question?

Senator PROXMIRE. So the remainder of the people—you talk about 300 million and 100 million. The remainder of the people, I take it, are children, or elderly, or institutionalized, or whatever?

Mr. PHILLIPS. The age structure of the Chinese economy is such that there are many, many young people around. So that when we say that about 400, 450 million people are employed, the remainder are either beyond the employable age or too young.

Senator PROXMIRE. I am going to get into questions on defense spending, but I will yield at this point to Congressman Wylie.

Representative WYLIE. Thank you very much, Mr. Chairman, I have had a busy morning, but I wanted to come to this hearing, because I thought it might be fascinating and there might be some information to help us make some of the decisions we have to make.

#### ANDROPOV INITIATIVES

What do you think of Mr. Andropov's proposal for economic modernization?

Mr. GATES. Let me address it generally and then ask Mr. Noren to comment specifically. I think one of the things that has struck us has been, apart from the discipline campaign, the relatively cautious approach that he has taken, in light of the problems that he faces.

Here is a leader that we believe came into office, at least in some part, because of a general recognition on the part of the other leaders, that the stagnation of the Brezhnev period had to be ended, and that there were serious problems inside the Soviet Union that needed to be addressed. Once they got beyond the consensus on that point, however, we believe that the leadership is still riven with divisions about the best approach in dealing with those economic problems. And our view is that Andropov at this point has still not been able to gather behind him a sufficient number of people in the Politburo to push through any kind of radical change or even any kind of significant economic reform or change in the system.

We think he has some ideas on that. We have watched with some interest and care his views and comments on the Hungarian experiments, and so on. He has appointed these study groups. He has had people looking at broader options for dealing with the econom-

ic problems, but so far, in terms of action, he has moved very slowly and very cautiously. But in terms of what he actually has done in that respect, let me ask Jim to address that in some detail.

Mr. NOREN. Well, I think it is true, he has been very cautious in his approach. A prime example of that is the economic experiment that has attracted the most publicity, and that is one that is to be instituted in selected industries, I think, five, and in a few republics beginning next January. The measure really is a continuation of the kind of experimentation that Brezhnev introduced. In fact, it is to be considered as a follow-on to the decrees on planning and management of July 1979. It attempts to reduce a few of the plan indicators. It attempts to heighten the emphasis given to contract fulfillment. It gives the enterprises a little more freedom in terms of retaining their own earnings and spending on investment projects that they deem advisable.

But this kind of experiment has been tried repeatedly. The problem is, you try experiments on a very limited basis, you give the enterprise the freedom to carry out some of their own investment. It is very difficult to make a place for that kind of investment in the broader planned economy.

It is very difficult for the enterprise which has some money to spend and wants to make its own decisions to get the materials and investment resources to carry out the investment. This is the sort of dilemma that reforms in the past have run up against. And it is one that this one will have to contend with as well.

Representative WYLIE. His new idea or proposal is centered sort of around an incentive system, is it not, so that those who produce more will gain more from their production?

Mr. NOREN. Yes, in a number of articles and in some of his speeches he has emphasized this. We still have not seen any wage reform that would, in fact, introduce that idea on a wide scale. There is some experimentation in industry, introducing something called the brigade system, in which you break down the work in the factory into smaller units. A foreman is selected jointly by the workers and the factory management, and brigade members are supposed to plan their work, in terms of who does what, make suggestions for better administration of the work, and also have some say in how the proceeds, the pay is to be distributed. That is still a very small experiment at this time.

Representative WYLIE. Do you think it is just talk to impress the rest of the world and maybe to have some psychological effect on some of the workers, or is there some major groundbreaking taking place here?

Mr. NOREN. He is very serious about this proposal to, in effect, widen wage differentials so as to make them a bigger factor in incentives for the labor force. And it was a bigger factor at times under Stalin. I think they are, as I say, serious, and I think something will come out of it.

#### GRAIN SALES

Representative WYLIE. There are a lot of cross currents, as you know, since the shooting down of the K commercial airliner and for a time it seemed as if we might be to talk bus

with the Soviets about peace in the world and that sort of thing. Right now, of course, the talk is much more hard-nosed than that in the United States. And we saw that with the defense authorization bill the other day, whereas it passed by a close vote in the House, the first time we came back from conference, it was not all that different, it passed by a rather big margin.

What is the significance of the grain sale to the Soviet economy, and I say that, because in some of the hard talk that we hear, there is some suggestion that we ought to cut off the grain sales that we are helping in their economy, at the present time, and that is just making them stronger for a long-term pull of our own national security and their security.

What is the significance of the grain sales, to the Soviet economy?

Mr. GATES. Well, this year because of their relatively good harvest, projected at 200 million tons, the Soviets will not need to come into the international grain market to the extent they have in the past. I think it is important to realize that Soviet purchases of foreign grain are closely related to their meat program. The Soviets are not buying, if you will, bread from the West. They are buying feed grain for their herds, so that they can increase the amount of meat available to the population.

Because of the good harvest this year, and I think Mr. Noren can probably provide you the specifics when I am done here, their import requirement will be less than it has been in the past 4 years; however, if you look back over the past 10 or 15 years, or even the last 100 years of Russian history, it is one of periodic good harvests punctuated by one disastrous harvest after another. So that one can project with some confidence that in subsequent years there will be a requirement for the Soviets to come back into the international market for substantially more grain.

That said, however, one has to take into account the alternative arrangements the Soviet Union made as an outgrowth of the U.S. grain embargo imposed after the invasion of Afghanistan. The Soviet Union has made arrangements, long-term grain agreements with other States, and to a very considerable extent can satisfy its requirement for imports from non-U.S. sources.

Let me ask Mr. Noren to add to that.

Mr. NOREN. We project this year, in the crop year July-June, that the Soviets will import 25 to 30 million tons of grain. That amount we believe they could get entirely from non-U.S. sources, although they are committed under the new long-term agreement to buy at least 8 million tons of U.S. grain before October 1984.

A few years ago in the 1981-82 crop year, they imported about 46 million tons. We think, as Mr. Gates said, that from time to time, harvest conditions will be such that they will need to import in the range of 40 to 50 million tons, and in those years, U.S. supplies will be important.

Over the longer run, we think that if they continue with the meat program, the livestock program, they will need on a continuing basis 20 to 30 million tons of grain per year. Imports of that magnitude, they certainly could get from non-U.S. sources unless there is really a bad crop in Argentina, Canada, and some other countries.

Representative WYLIE. I understand that you want to intervene at this point, Mr. Chairman.

#### CAUSES AND EFFECTS OF DEFENSE SLOWDOWN

Senator PROXMIRE. Chairman Gates, in previous hearings I have discussed with your predecessors the potential effects of reduced Soviet defense spending on the Soviet economy.

The immediate medium-term effects of reduced defense outlays have always been described as rather marginal. That is, if they cut down on defense, it will not stimulate the economy that much, with potentially greater effects over the long term. Now that the CIA has revised its estimates of Soviet defense costs and concludes that there has been a slowdown in the growth rate of total defense and a leveling off of procurement of military hardware since 1976, I wonder if we may be seeing some of the effects of that in the improved economic performance in the Soviet Union.

Can you discuss that?

Mr. GATES. Let me address it, again, generally, and then ask Mr. Licari and Mr. Noren to contribute.

The slowdown in Soviet procurement growth has accompanied a general slowing of growth in the Soviet economy. As I mention in the submission and also in the summary, as a percentage of GNP, defense spending has remained about constant at 13 to 14 percent for a decade or more. So at this point, as far as we can tell, there is no major dividend from reduced defense spending that has become available to the Soviets for investment in other areas.

What the Soviets now face is a choice in terms of future allocations, whether to reduce further the growth in defense in order to make additional investments in other parts of the economy. I might add that it is my personal view that the military itself is probably divided on this issue, and it would be divided along the following lines:

Some in the Soviet military probably understand that their long-term—

Senator PROXMIRE. Let me just interrupt to say that—you see, I am a little puzzled. It seems to me that they have slowed down their procurement, which is the main competitor, it would seem to me with the nonmilitary sector, and there has been growth. So why would there not be some kind of a dividend, in that sense?

Mr. GATES. Well, we have not seen any appreciable recovery in economic growth until this year.

Senator PROXMIRE. Is there not a dividend this year?

Mr. GATES. It is conceivable that there might be, but frankly, I think it is too soon for us to be able to detect anything like that resulting from resources being diverted from defense.

Representative WYLIE. If the chairman would yield on that point.

Senator PROXMIRE. Surely.

Representative WYLIE. You say there is a slowing down of the rate of growth in defense spending, and then you say that the percentage of GNP devoted to defense has remained constant, though, at about 13 to 14 percent. That seems inconsistent to me.

Mr. GATES. There has been a declining rate of growth in the GNP as a whole.



Representative WYLIE. Oh.

Mr. GATES. So rates of growth of both defense and GNP have been declining together.

I might point out that, as the submission makes clear, to the extent there has been a decline in the rate of growth in procurement, I think our judgment is that a desire or a decision on the part of the Soviet leaders to reduce investment in defense spending is not the principal factor involved. Other problems in the economy—the fact that they cannot devote enough industrial materials and investment resources to maintain the rate of growth in procurement, and the problems they are having developing and producing high-technology weapons are also important factors.

As I was saying, though, it seems to me that there probably is a division in the military among those who wish to maximize current spending on defense and, therefore, make a strong bid to restore the traditional rate of growth in procurement, and those who may see that their longer-term capability to compete with the United States depends on restoring and improving the essential strength of the economy itself, the steel industry, cement industry, the railroads, and so on. Unless some of the problems in these industries are corrected, their long-term ability to compete with the United States is going to be damaged. So I think that there probably will be—or may well be some divisions in the military along those lines.

Let me ask Mr. Licari to amplify.

Mr. LICARI. Sir, let me just add two points to Mr. Gates' comment. First, I think, is to go back to our discussion about the improved growth prospects for this year and emphasize that the rebound effect dominates, in our view—

Senator PROXMIRE. What do you mean by the rebound effect?

Mr. LICARI. The rebound effect would dominate in terms of understanding the improved growth prospects this year. I do not think we are talking about a change in the trend of growth, either returning to earlier trends or raising the trend in growth for the Soviet economy. We are emphasizing a short-term movement from what was a rather depressed rate of growth last year, primarily because of bad weather affecting both industry and agriculture to what might be a more normal rate of activity for the economy as a whole. I do not think we can associate that rebound effect with the shifting of resources among sectors in the economy.

The second point I wanted to add goes back to the procurement question, and our new estimate which suggests a flattening in the level of procurement. First, it is important to emphasize that procurement remains very high. We are not talking about procurement levels falling. So the drain on resources—machinery, in particular—into procurement remains very high. Second, even if there has been a stretchout in some programs to ease the burden somewhat on the machinery sector, it takes a long time for additional machinery devoted to civilian uses to work its way into production. We are talking about gestation periods here of several years before new plant and equipment becomes really fully productive.

I think, therefore, that even if we were to hypothesize some easing of the drain on machinery production to defense and some shifting to civilian uses, it would be too early to see it in growth performance in 1983.

## DELAY IN IDENTIFYING NEW TREND

Senator PROXMIRE. Now let me put some numbers on this, and maybe I can get a better understanding. In the first place, let me say, is there some way that the tracking of Soviet defense trends can be transmitted more swiftly to the Congress? If Soviet military procurement has been level since 1976 and the growth rate of total defense has been cut in half, should not the Congress have been made aware of this before now?

Mr. GATES. Mr. Chairman, we, ourselves, did not come to appreciate the implications of this development until this year. In our earlier assessments, we had characterized much of the decline in the rate of growth in procurement since the mid-seventies as part of the cyclical effect of making the transition from one generation of weapon systems to another, and that we were in the trough, if you will, of one of those cycles.

As I say, it has only been within the last 6 to 8 months that we in the community, and particularly we in the CIA, have come to believe that something more significant was happening here.

I should add, as I acknowledged at the outset, this is the view of CIA at this point. We have spent a number of months working these figures with the Defense Intelligence Agency to identify areas where we share similar perceptions as well as those where our assessments differ.

So there really has been no delay in informing the Congress of this. The materials that have been published this summer by the Agency really represent the first time that this case has been articulated.

Senator PROXMIRE. But here you have a situation where in 1976 there was a GNP growth of about 4 percent in the Soviet Union. In 1977 and 1978, it was about 3 percent; in 1979 and 1980, about 1 percent; and in 1981 and 1982, about 2 percent. And now in 1983 you expect it to be about 3½ percent. Over all those years the growth of defense procurement has been about zero. It seems to me that is a significant policy shift in the Soviet Union, and also it does seem to me to indicate a very important difference that we should have been made aware of. I realize the DIA has a different view on the Soviet military buildup.

Mr. GATES. Joe.

Mr. LICARI. Senator, let me mention several points that relate to the issue that you are raising.

Senator PROXMIRE. Before you do that, let me say there are reasons why I think that the CIA estimate is more plausible than that of the DIA. In the first place, the DIA has an ax to grind. It is the Defense Department. They always like to make the Russians 10 feet tall. In the second place, they do not allow for inflation, and you do. It seems to me that if we want a more precise and accurate estimate, we should allow for inflation.

Go ahead.

Mr. LICARI. In the estimate that existed a year ago we had observed some flattening of procurement in the mid-to-late 1970's, but we had expected a normal cyclical return to faster growth in the following years, a procurement cycle, in a sense. Work done in the summer of 1982 and the fall of 1983, suggested that this was not

occurring, for a variety of reasons. Our expectations had proven wrong. And as Mr. Gates is saying, as the story developed over the past year we did try to communicate elements of this story to various people in the community and in Congress as well. While we had observed some tailing off in the rate of growth of procurement going back to the mid-1970's, we expected a cyclical upturn. But we have not seen an upturn in the late 1970's or early 1980's.

We are attributing its absence to several factors. We cannot say what the relative importance of these factors is: technological problems in R&D; technological problems in serial production of very complex weapons; economic bottlenecks; an inability to insulate defense from these kinds of difficulties as much as in the past; and perhaps even policy decisions, either broad-based policy decisions or very particular ones connected, for instance, to SALT I and SALT II treaty issues.

As I said the beginnings of this change were observed in our previous assessments but we were not aware of the extent of the changes until the work done over the last year.

Senator PROXMIRE. My time is up. Congressman Wylie.

Representative WYLIE. Thank you, Mr. Chairman.

#### INCREASE IN MILITARY SPENDING

I would like to follow up on the questions asked a little earlier, which I think are important, about the CIA estimates as to the rate of growth of defense spending in the Soviet Union. You have indicated that it has perhaps declined and that defense spending has remained fairly constant as a percentage of GNP. I was in on a meeting or briefing with the Secretary of the Navy this morning in which we were getting different signals, or at least it is confusing to me. What I heard there is that the actual amount of money which the Soviet Union is spending for defense is going up.

Mr. GATES. Yes, sir. That is accurate. Even if our findings are completely accurate with regard to the flattening in the rate of growth in procurement, we still estimate that total defense spending has increased by 2 percent per year on average since the mid-1970's. And a couple of comments made in the summary are probably worth repeating here. First of all, we are still talking about a Soviet effort that still is running between 13 and 14 percent of GNP, that is over twice the percentage of GNP devoted to defense spending in the United States. Finally, the committee was reminded that the level of procurement, even though it has flattened, is still 45 percent higher than that in the United States. So even if the Soviet rate of growth in defense spending is only 2 percent, or if procurement is virtually flat, the amount of resources that the Soviet Union is investing in defense is still such that they will be able to make enormous additions to their military forces and to achieve substantial modernization of those forces during the remainder of this decade.

#### MILITARY THREAT

Representative WYLIE. So we do not want to feel that the Soviet military threat to the United States has declined.

Mr. GATES. Not in the slightest. These figures do not give a picture of capabilities of forces, either actual or potential. They are meant to suggest levels of effort, or levels of emphasis in Soviet defense investment, for example. For capabilities, you need to look at what they are buying with money they are spending. And that was what I was referring to when I said that during the period since 1976, when we have seen a slower rate of growth of real defense spending, we are still looking at a Soviet Union that has purchased over 2,000 strategic ballistic missiles, 60-some strategic ballistic and attack submarines, 5,000 combat interceptor and tactical aircraft, and so forth.

The resources that they are devoting to defense are enormous. The dollar costs of Soviet procurement and total Soviet military activities were both about 45 percent higher than their U.S. counterparts.

Representative WYLIE. Well. I think that is a key point, and I think that we wanted to make it very clear for the record that, even though there might have been a decline in the growth of Soviet GNP that still does not give us any hope as to the goal or aim of the Soviet Union vis-a-vis their military threat. And I think that that needed to be put in the record at this point.

#### PETROLEUM ESTIMATES

I understand the Soviets increased their petroleum exports by something like 15 percent last year; is that correct?

Mr. HAUS. Yes, on that order to their hard currency customers.

Representative WYLIE. How can the Soviets increase their petroleum exports, when we have been hearing for years that their petroleum resources have been going down? What are the implications of that or who is being squeezed, and where are the petroleum exports coming from?

Mr. HAUS. Well, let me answer in the following way: It is really a two-part question—it needs a two-part answer.

They have been getting additional oil for export this year and last year, really, from two sources. The first source is by increased production. Soviet oil production has been growing at around 1 percent a year since the late 1970's. The second source, however, is by some degree of success in slowing down the rate of growth in consumption at home. They have also opened up additional oil for the market, for the hard currency market, simply by squeezing—cutting down—on the rate of growth of shipments to their Eastern European client states.

The real answer to your question, however, and one that I think is clear in the submission, is that our estimate of the Soviet oil situation has changed a bit. It has been in transition for several years now. We just completed a fairly extensive study that took up about a year and a half—a complete top-to-bottom look at what the Soviet situation is. We have revised some of our previous judgments. Basically, in the 1970's, in the late 1970's, when we would have done our original work, we concluded that the Soviets were running out of reserves, at least accessible reserves, and probably would be unable to continue the high rate of effort that they had been making up to that point. That judgment was largely based on

what the Soviets were saying themselves in the press and in a variety of unclassified sources.

Since the early 1980's, [security deletion] we have changed our minds about several things. Principally, we now believe that the Soviets do have substantial oil reserves, do have a large enough reserve base to permit them to see petroleum production grow for several more years, perhaps through the end of this decade, if they are able to make the effort. Now that is a major change. And it is largely based on new data and the application of different types of techniques that just simply were not available to us in the late 1970's.

The second thing that has happened, however, is that the Soviet leadership did make the conscious decision around 1977 or 1978, possibly in part spurred by the press the Agency's estimate had received, to commit the resources that were needed. They continue to do this, and this accounts for a large part of the growth that we are now seeing, admittedly, it is very halting growth compared to past years, but it has been the result of the Soviets making the effort particularly in terms of investment in drilling in a big way.

#### REVENUE FROM ENERGY EXPORTS

Representative WYLIE. Well, I think it is important to get that on the record, Mr. Chairman, because, as I understand it, roughly two-thirds of the Soviets' hard currency income in recent years has come from oil exports. Is that fairly accurate?

Mr. NOREN. Oil and gas. About 50 percent of hard currency receipts last year.

Representative WYLIE. Oil and gas, and that brings up the new pipeline which—how will that relate to the question of oil and the production of it when it comes in next year, in the Soviet economy, in general?

Mr. HAUS. When the pipeline comes on line—and assuming the Western Europeans take all the gas to which they are entitled—it will, in fact, permit the Soviets to earn a substantial amount, though I do not have the exact figure on the tip of my tongue. It would depend, of course, on the price of oil and gas at that time. But it would, roughly, at current price levels permit them to replace the earnings from one-third of their current oil hard currency exports with gas. So it will be significant.

Representative WYLIE. So, in other words, the Soviets are paying for grain, corn from Iowa, by selling oil to the Germans and French, and next year they will be paying for it by selling gas to the Germans and French. Right?

Mr. HAUS. That is correct.

#### CIA AND DIA ESTIMATES COMPARED

Representative WYLIE. OK. Are there still major differences between the CIA and DIA estimates of Soviet petroleum reserves?

Mr. HAUS. Yes, there are. Let me back up a moment on that. DIA essentially agrees with our estimates of Soviet petroleum proved reserves, at this time. The difference between the DIA and CIA lies in their assessment—DIA's assessment—of the level of the effort the Soviet are going to be willing and able to make to tap

those reserves over the rest of this decade. Our economists see a bit of a squeeze and a series of hard choices that the Soviet leadership is going to have to make. We believe that the Soviets will probably take advantage of the gas sales coming on line to hold down the growth in investment in the oil industry which will make oil production drop a bit. The Defense Intelligence Agency, however, believes that the Soviets will continue to make whatever effort is necessary to keep oil production growing.

We are talking about those differences, and I think they have been narrowed somewhat over the past year or two, but they are still there.

#### BAM RAILROAD

Representative WYLIE. I understand the Baikal-Amur Railroad in East Siberia is due to come on line very soon or due to be completed very soon. Will this railroad generate hard currency for the Soviet Union?

Mr. NOREN. It will, eventually, sir. What it requires now that they will have the main trunk line, it requires the development of feeder lines going north into the resource-rich region and development of some of the mineral deposits. We think that will be a factor in the 1990's, but not in the 1980's.

Representative WYLIE. Will that affect the Soviet relations with China vis-a-vis trade?

Mr. NOREN. It is bound to. It is bound to, sir.

Representative WYLIE. For economic, as well as military purposes?

Mr. NOREN. Well, it is—I think we have believed since the beginning that the line had a military purpose as well as an economic purpose. But the development of resources in the Far East and in East Siberia is going to be a factor in Soviet trade with China and Japan, as well.

Representative WYLIE. Thank you very much, Mr. Chairman.

#### MILITARY SPENDING AND EFFECTIVENESS

Senator PROXMIRE. Mr. Gates, the fact is, if it is a fact—at least that is the position of the CIA—that the U.S.S.R. is spending 45 percent more in dollars and 25 percent more in rubles than we are in procurement, in total military spending, but that does not mean that they are necessarily buying 45 percent or 25 percent or any more military effectiveness, does it? There is no way you can measure that. Some people allege, they may or may not be right, that the Soviet Union lacks discipline, its troops lack discipline, the leadership is poor and the clash between their planes and our planes, our planes being flown by the Israelis, their being flown by the Syrians over Lebanon, it was a disaster for them. Our planes were obviously far, far better.

And so it seems to me that it is very hard to come to any conclusion that any comparisons are going to give us a match or a reasonable comparison between the military effectiveness of either side. Is that right?

Mr. GATES. Mr. Chairman, I think that both our own military analysts and American military officers who have had the opportuni-

ty to observe the Soviets would make the observation that while the Soviets do have problems and that their effectiveness is perhaps sometimes not as great as portrayed by some, they nevertheless represent a very effective fighting force. Much of their equipment is on a technological par with our own, and in some respects, particularly in conventional equipment, superior to our own. And when you add to that the impressive quantitative advantage they have in some of the conventional forces, particularly in central Europe, you have a significant military fighting force.

The discipline of Soviet forces generally is regarded, I think, as pretty good. When you get into questions of initiative and the ability to deal with changed circumstances, and so on, you get into areas that are very hard to quantify. By the same token, I, personally, would not equate a Syrian pilot flying a Soviet aircraft with an experienced Soviet pilot flying a Soviet aircraft.

Senator PROXMIRE. The Israeli pilots are better than ours? [Laughter.]

Mr. GATES. I will not make that judgment.

Senator PROXMIRE. They are not as good as the Wisconsin National Guard. I will tell you that. [Laughter.]

Mr. GATES. So I would say that you are correct—the numbers do not translate one for one. The fact that their effort is 45 percent larger, does not mean that they have a 45-percent more effective fighting force or a 45-percent larger one, in any given instance. But at the same time, I do not think anyone who works the Soviet military problem would denigrate either the technological or the personnel capabilities of their armed forces.

#### EXPLANATION FOR THE SLOWDOWN

Senator PROXMIRE. Now the explanation for the slowdown of the growth rate and the leveling off of procurement provided in your briefing is classified, yet I cannot think of a more important change in the trends, as far as Members of the Congress and the public are concerned. What can you say in unclassified language to help the public and Congress understand the possible causes for the change in the trend, the trend of Soviet procurement, and its significance.

Mr. GATES. Let me ask Mr. Licari to tackle that one.

Mr. LICARI. Senator, I mentioned that there are a number of factors that one can cite that we think are underlying the trend. What we cannot really do, though, I think, is calculate some net effect and determine what the most important factor was. We can list factors, which we think are underlying the new trend, starting with the procurement cycle phenomena, but we think we have to go further than that. That was the traditional way of explaining short-term changes in Soviet defense spending, as it related to procurement.

The additional factors we can also cite, are technological problems in development of various systems, in manufacturing constraints in serial production, in the role of economic bottlenecks.

Senator PROXMIRE. Now let me make sure that I understand. What I asked for is what you can tell us to be unclassified. Unclassified. I realize that is quite a difficult thing for you to do, perhaps,

but the reason I am asking that is because I think the slowdown in the growth rate is something that the American people ought to understand, and as long as it is classified, obviously, it cannot be disclosed.

Maybe it would be better to do this. Maybe—because I realize this is delicate and difficult. Perhaps when you sanitize your remarks, you can put in the record your best judgment as to what we can say that would be unclassified to explain this.

Mr. LICARI. Fine, Senator.

Senator PROXMIRE. Could you do that?

Mr. LICARI. Yes. Yes.

Senator PROXMIRE. Very good.

[The following information was subsequently supplied for the record:]

We cannot attribute the slowdown in the growth of military procurement to any single factor. Undoubtedly, the natural lulls in production as older weapon programs are phased out before new ones begin have contributed to the change in the trend. The extended nature of the slowdown, however, goes far beyond the normal dips in procurement cycles that we have observed in the past. Instead, the continued slow growth in procurement since the mid-seventies seems related to a complex combination of factors, including technical problems, economic bottlenecks, and perhaps even policy decisions.

New Soviet weaponry embodies more advanced technology than has been typical, given traditional Soviet practices that emphasize evolutionary design. The Soviets have undoubtedly experienced more problems in both R&D and serial production of these high technology systems. For example, the increase in the sophistication of the electronics and in the quality control required probably is substantially greater than that incorporated in earlier weapons changeovers. These problems in turn have probably delayed deployment and caused lower annual production rates for some new systems.

The period of slower procurement growth corresponded with a period of unprecedentedly slow growth for the Soviet economy. Soviet press reporting since the mid-seventies has been replete with descriptions of transportation snarls, energy shortages, and industrial bottlenecks on a scale that seems to suggest increasingly severe problems for what is traditionally a very taut economy. We believe that the Soviets are not able to insulate defense production from such general economic problems and that defense growth may have been slowed by them.

Finally, policy decisions also may have contributed to the slower growth in procurement. Arms control agreements limited the development and deployment of some strategic weapons. Furthermore, the leadership may have chosen to stretch out the procurement of certain systems as part of a strategy to alleviate some of the pressures on the economy.

Senator PROXMIRE. Now one reason for making as much of your analysis as possible available for public discussion is that there are such a wide range of possible explanations. For example, a slowdown in the growth rate might have been caused by problems in the overall economy, or they might be the result of explicit policy decisions. You mentioned the compliance with the SALT agreements, and so forth. So it might be on purpose or it might be the result of actions over which they had no control or a combination of the two.

Do you agree that it probably was a combination of economic forces and policy decisions that led to the slower growth rate of defense costs?

Mr. GATES. My view is that at this point the principal factors probably were the result of forces over which they had no control. The policy factors that we are discussing, apart from whatever decline in procurement that might have been related to adherence to



SALT I and the unratified SALT II, generally have to do more with policy mistakes, decisions that were made in the mid-1970's on investment that in fact, had a very negative effect on overall economic development in the latter half of the decade.

I will turn the microphone over to Mr. Licari, but my judgment, based on what I have been seeing is that the determining factors at this point, at least, are largely due to forces beyond Soviet control.

Senator PROXMIRE. Well, before you turn it over, let me sharpen my question a little bit by giving an example.

#### MILITARY EXPORTS

In prior testimony, the DIA spokesman pointed out that Soviet military exports and assistance has been rising, and that since 1980, the U.S.S.R. has been the world's leading arms exporter. Does not the fact that the Soviet military procurement has leveled off since 1976, while Soviet military exports have been increasing, suggest that a policy decision was made to not interrupt the increase in arms exports in order to increase the level of Soviet military procurement for Soviet forces?

Mr. GATES. Well, first of all, again, just to make it clear for the record, what we are talking about is a leveling of the rate of growth. You are still seeing an enormous amount of production of weapons on the Soviet side, probably ample to meet most of their own requirements, as well as to have sufficient numbers available for the export market.

Also, although I would defer to Mr. Licari on this, it is not clear to me that the leveling off has occurred in all systems. You may have some very big ticket items where procurement has leveled off, or where the numbers emerging for the field are not as great, but in other areas, such as perhaps tanks or artillery or something like that, the rate of production might not necessarily have been flat.

But what I am trying to say is, going back to the response to Congressman Wylie's earlier comment, we are still dealing with Soviet production and investment that are enormous. It would probably give them ample output to meet their own requirements, while at the same time having something for the export market.

#### SALT AGREEMENTS

Senator PROXMIRE. All right. Well, then, let me ask you about the possibility that the Soviet decisions to comply with SALT I and SALT II may have slowed down the pace of procurement in certain areas? You indicated, I think, that that might be part of it.

Can you explain what areas may have been slowed down in response to those two treaties?

Mr. GATES. One example that I have been given would be the number of ICBM launchers. Because of the limits placed on the number of ICBM launchers that can be deployed, they would not necessarily be buying as many ICBM's.

Senator PROXMIRE. But in view of the enormous amount of military procurement the Soviet Union has, would that be a significant element, significant enough to explain the fact that they have fattened their procurement since 1976?

Mr. GATES. I do not think that it would be a major factor, no.

Mr. LICARI. Senator, if we recognize though——

Senator PROXMIRE. I did not mean to say "fatten." I meant "flatten." [Laughter.]

Mr. LICARI. Some of these systems you are talking about, related to SALT I and SALT II, of course are the SSBN's, which are very expensive systems. These were, indeed, among the systems that we saw being delayed in deployment in the last few years. They are very expensive, very long lead-time systems, and I would say that they could contribute, certainly to this sense of flattening. They are not by themselves the sole factor, but certainly the slower rate of deployment of those systems is a contributing factor. It would show up definitely in trends.

Representative WYLIE. Mr. Chairman, I am going to have to leave for another meeting. I wonder if I might have permission to submit about four followup questions for the record.

Senator PROXMIRE. By all means. Yes, indeed, Congressman Wylie.

Representative WYLIE. It is a very distinguished panel, and I would like to compliment you for your work here this morning.

Senator PROXMIRE. Thank you so much, Congressman Wylie.

[The following information was subsequently supplied for the record:]

**RESPONSE OF ROBERT GATES TO ADDITIONAL WRITTEN QUESTIONS POSED BY  
REPRESENTATIVE WYLIE**

**Question 1:** How does the low level of Soviet military pay relative to the United States distort the comparison of the percentage of Russian military spending relative to its GNP? In other words, is the actual Russian military effort, relative to its GNP, even greater than that shown by the ratios because it pays its military personnel at a much lower rate than does the United States?

**Answer:** Our measure of the burden of Soviet defense spending--the ratio of defense expenditures to GNP--is 13-14 percent for 1982, the most recent year for which we have an estimate. Costs of Soviet military personnel account for only slightly more than one percentage point of that figure. Soviet prices of civilian and defense activities involve subsidies and taxes that could distort an estimate of this kind. Consequently, our procedures include an attempt to adjust our estimates of actual Soviet costs to give estimates more closely akin to real resource costs.

This is particularly true in the case of military personnel costs. The bulk of Soviet military personnel are conscripts who receive a very low wage. Our calculations of military personnel costs, however, take into account the housing, medical care, food, and other services provided these conscripts in addition to their wage and other monetary allowances. The net result is to cost conscripts at something close to the total wage received by unskilled labor in the Soviet Union, which is consistent with their low educational levels. Of course, these adjustments are themselves estimates and our limited information is more likely to lead to an underestimate, rather than an overestimate of military personnel costs. Our defense burden estimate may still involve some understatement because of our treatment of manpower costs, but it is likely to be small because of the adjustments we already make.

**Question 2:** There is some controversy over how technologically dependent the Soviet Union is. To what extent is the Soviet Union technologically dependent on the West? To what extent is the Soviet Union technologically dependent on the United States?

**Answer:** Western technology plays an important, if not critical, role in the Soviet economy. Imported technology has allowed the Soviets to reduce research time, engineering risks, and production costs in some key industrial sectors. Certainly the development of Soviet products such as high-quality fertilizers, drill bits, and third-generation computers was markedly accelerated with the aid of Western technology. In the aggregate, however, Soviet dependence on the West for imported technology is relatively small. Around 10 percent of new Soviet machinery and equipment is imported and last year, for example, one-third of imported machinery and equipment

(in value terms) came from Western countries. Soviet technological dependence on the United States is small. Less than one percent of all imported machinery and equipment came directly from the United States in 1982. The amount of American equipment actually reaching the Soviet Union, however, is undoubtedly higher because transshipments and illegal transfers are not identified in trade statistics.

Even though the overall share of machinery and equipment imported from the West is small, the Soviets rely on the West for the bulk of their imports in certain important areas. In 1982, Western machinery and equipment represented more than one-half of Soviet imports in the following categories:

- ° automotive production equipment;
- ° equipment for the timber, pulp and paper, and wood processing industries;
- ° road and roadbuilding machinery;
- ° drilling and prospecting machines and equipment;
- ° electric motors;
- ° equipment for the chemical industry; and
- ° mining equipment.

Other items high on the Soviet list of imported Western technology (30-50 percent of machinery and equipment imports) include equipment for the printing industry, metal rolling machinery, cable and wire, metal processing/finishing equipment, crushing/grinding/concentrating equipment, equipment for the construction materials industry, and instruments and laboratory equipment. Only in loading equipment, equipment for the construction materials industry, and roadbuilding machinery does the US share exceed five percent of total machinery and equipment imports, but in all three categories it is less than 10 percent. The Soviets also import other Western technology such as metal-cutting machinery, computers, and agricultural equipment that has certainly played an important role in key civilian and military industries even though their share in total Soviet imports is small.

Although the Soviet Union produces all of these categories of machinery and equipment domestically, imports are vital for a number of reasons. Soviet equipment does not normally measure up to Western equipment in terms of reliability, sophistication, durability, or usefulness for some special purposes. Since the Soviets do not report domestic production of these items on a base comparable either with their trade statistics or with Western data, the overall level of "dependence" on Western technology is impossible to measure.

We do know, however, that Western imports help advance Soviet technological progress and generally improve economic performance. Nevertheless, the Soviet economy is clearly capable of remaining viable in the absence of imports of Western technology.

**Question 3:** To what extent is the Soviet Union dependent on legal technology transfers from the United States as opposed to clandestine industrial espionage? (Assuming the Soviet Union is substantially dependent on the United States for technology, what percentage of that do they get in open, legal, free trade, and what percent is stolen?)

**Answer:** Soviet acquisition mechanisms include: legal means through open literature, through legal trade channels, and through student scientific and technological exchanges and conferences; illegal means through trade channels that evade US and Western (i.e., COCOM) export controls, including acquisitions by their intelligence services through recruited agents, industrial espionage, and overt collection techniques. While a large volume of technology is acquired by nonintelligence personnel, the overwhelming majority of what the United States considers to be militarily significant technology acquired by and for the Soviets was obtained by the Soviet intelligence services and their surrogates among the East European intelligence services. However, acquisitions by other Soviet organizations are important since it is often the combination of legally and illegally acquired technologies that gives the Soviets the complete military or industrial capability they need. Legal acquisitions generally have their greatest impact on the Soviets' broad industrial base, and thus affect military technology on a relatively long-term basis.

Over the past five years, Soviet legal and illegal trade efforts have concentrated on computers, microelectronics, air-breathing propulsion technology, guidance and navigation systems, underwater acoustical sensors, optical (including laser-related) technologies, and advanced manufacturing processes and equipment. Detected diversions and evasions over the past several years were particularly heavy in the field of semiconductor manufacturing equipment, reflecting the Soviets' intent to improve their entire electronic components industry.

**Question 4:** The machine tool industry is a very important component of the defense industrial base of the USSR and US. What is the rate of growth of the Soviet machine tool industry? Can anything be inferred from the type of machine tools being produced?

**Answer:** The machine tool industry is a key in Moscow's efforts to raise industrial productivity and to modernize its civilian and defense industries. To accomplish these twin objectives, the USSR has changed its production strategy in the machine

tool sector. Until the mid-1970s, much of the current output consisted of general purpose machine tools that were relatively inexpensive to produce, and the Soviets increased machine tool production by about three percent annually. Given the new needs for special purpose or complex production in a technologically changing society, however, the USSR began in 1977 to cut back the huge annual output of general purpose machine tools, and to expand production already initiated of specialized and automated machine tool equipment. This specialized equipment included numerically controlled (NC) or computer operated (CNC) machine tools, automatic lines, robots and manipulators, machining centers, and aggregate machining systems. These changes led to a 13 percent decline in the total number of machine tools produced during 1978-82 but, at the same time, the introduction of more expensive and complex equipment.

It is taking Moscow longer than the West to modernize its machine tool industry, however. The Soviets are impeded by the relative backwardness of the Soviet electronics and computer industries, the lack of trained computer programmers, engineers, and machine tool operators, the difficulties in integrating new equipment with old, and a state-operated traditional manufacturing system that often discourages innovation. The need to continue to service the existing machinery and to replace the aging portions of the huge Soviet machine tool industry also creates great pressure for continued large-scale production of conventional models. Hence, the USSR continues to produce three times as many conventional metalcutting tools as the US. Although the Soviet annual NC machine tool output of about 10,000 units equals that of the United States, advanced computer-operated multiaxis machines--now common in the West--make up only four percent of total Soviet production compared with 56 percent of the US total.

To help compensate for the slow progress in advanced machine tool production, the USSR is resorting to large-scale imports. In the first half of the 1970s, 80 percent of Soviet machine tool imports consisted of conventional or specialized equipment, but during the past decade advanced machine tools have figured heavily. For some models--machining centers, for example--imports even exceed domestic production. This equipment has helped the Soviets to start up or improve domestic civilian and defense production.

Senator PROXMIRE. If the slowdown was caused to any significant extent by SALT I and SALT II, that would tend to contradict what has become conventional wisdom about how detente failed to modify Soviet behavior and would be a powerful argument for arms control negotiations. Why should the possible effects of the SALT agreements on Soviet military procurement be classified, not available to the public any more than the potential effects of economic problems on military procurement is classified?

Mr. GATES. Mr. Chairman, first of all, our position would be that while the slowdown in the rate of growth of spending on some of the systems covered by SALT may have been a factor in the overall leveling of the rate of procurement, we have not seen a change in Soviet behavior. Moreover, what we have observed on several occasions is a substitution. We have not seen Soviet design bureaus or Soviet weapons production facilities closing down; what we have seen them do is produce different kinds of weapons systems, so that those that have been producing one kind of submarine are producing another kind of submarine.

Senator PROXMIRE. Wait a minute. It seems to me that there is a change here. They had been accelerating, they had been speeding up. And it is true that they are at a very, very high level of procurement and a high level of military spending, but they do not seem to have increased overall, if you are right that their increase may be in some areas but not in others. But this is a change overall; to have something that is moving ahead at a rapidly increasing rate and it levels off, it seems to me that is a change that we should be sensitive to and aware of.

Mr. GATES. Yes, sir. And that gets at the point that Mr. Licari was making about the stretchout of some programs, the fact that some of their ballistic missile submarines have not been coming off the ways as quickly as they might otherwise have.

But I just wanted to underscore the point that we have not seen a transition from weapons production capabilities from SALT to civilian purposes or to nondefense purposes, but rather a swing toward other defense areas.

Senator PROXMIRE. I am talking about changing overall, not conversion. And I realize that in asking this next question it is hard to put it in perspective because all of us are right now so sensitive and aware of the vicious shooting down of the unarmed Korean jet, and that is right in the forefront of our mind, and we realize the Soviet Union is paranoid and has an enormous military power and has a gross disregard for human life. I realize that Soviet defense costs are growing. Even if they were level there would be huge additions to the Soviet weapons inventory each year, and Soviet military power would continue to be great. Nevertheless, the current trend can be viewed as a slowing down of the Soviet military buildup and a trend which is quite at variance from the conventional wisdom about Soviet defense spending during the decade of the 1970's. Is it possible that the Soviet behavior is in part—this is the part that at this point seems a little incongruous—a response to the improved U.S.-Soviet relations that took place in the early 1970's and the efforts that were made to continue improving relations during the rest of the decade?

Mr. GATES. Mr. Chairman, I spent half a dozen years on the National Security Council staff under three Presidents, and it is my view that, with the exception of occasional bumps upward, the Soviet Union has regarded its relationship with the United States to have been generally deteriorating since at least 1975 and probably 1974, after the failure to pass the Trade Act of 1974 and the associated legislation granting the U.S.S.R. most-favored-nation status and making it eligible for Export-Import Bank credits.

There have been some bright moments in that period in terms of Soviet perceptions of the potential for improved relations, for example, the Vienna summit in 1979. But from their standpoint the overall trend in the relationship has been a negative one for a number of years. Therefore, it is my judgment—and it ties in with our earlier statement—that the decline in the rate of growth of procurement is tied principally to forces beyond their control at this point.

As I say also, we believe that they are poised, both from the standpoint of weapons systems in research and development, as well as production capabilities, to resume a higher rate of growth in their defense spending.

#### COMMITTEE STAFF STUDY ON SOVIET DEFENSE TRENDS

Senator PROXMIRE. Now you have had an opportunity to review the committee staff study on Soviet defense trends which tried to explain the latest conclusion of the intelligence community about the trends in Soviet defense costs and put them in perspective.<sup>1</sup> According to this study the DIA agrees with your constant dollar estimates but comes to a different conclusion when it uses its own methodology to estimate current ruble expenditures for defense. DIA concludes that there was no slowdown in total defense spending in current ruble prices, which increased by 6 to 7 percent per year during the 1970's. Is that a correct description of the differences between the CIA and DIA estimates? And if so, can you explain why Congress ought to give greater weight to the constant price estimates than to the DIA's current price estimates?

Mr. LICARI. Senator, you are right in citing the differences in estimates and methodology between the DIA and CIA. We choose to develop constant price estimates of Soviet defense costs because they exclude inflation and give us in a sense a real trend of effort devoted to military activities overtime.

DIA, on the other hand, is attempting to develop a series for defense spending that it thinks is closer to what the Soviet leadership would be looking at. That is not our intention. We have different objectives and approach them in different ways.

Our estimate of defense spending in constant prices, we think, gives us a reasonably accurate indication of trends in the effort the Soviets are devoting to military activities. But we do not pretend that that in any way gives data that the Soviet leadership would be looking at. Our estimate is in constant prices; it uses Western concepts.

<sup>1</sup> The full text of the committee staff study entitled "Soviet Defense Trends", may be found on p. 371.



## INFLATION ADJUSTMENTS

Senator PROXMIRE. What is the difference in that inflation adjustment that you make?

Mr. LICARI. We actually do the calculations in constant prices. So we do not really make an inflation adjustment. We calculate the costs—

Senator PROXMIRE. How do you determine constant prices in the Communist economies?

Mr. LICARI. We happen to use as a price base the year 1970. The reason is that the Soviets introduced a set of new prices in 1967 which we think better reflected real resource costs, and we accumulated enough prices for the several years centered around 1970 to use that as a price base year. We also make an adjustment after we compute total defense costs to adjust, as you are suggesting, for the fact that actual Soviet prices do not reflect resource costs as fully as Western prices do. It is called a factor price adjustment.

After we calculate, using a subset of official Soviet prices and other data, an estimate of Soviet defense spending in ruble terms in constant prices, we make a further adjustment to account for the fact that actual Soviet prices are not as reliable as Western prices in measuring resources.

Senator PROXMIRE. Congressman Scheuer.

## SOVIET LIVING STANDARDS AND THE MILITARY BURDEN

Representative SCHEUER. Mr. Chairman, let me apologize for coming late. I chaired another committee meeting and then I had an appointment with Mr. Ruckelshaus, and I am sorry to have missed what was obviously an extraordinarily interesting session.

Let me ask a very naive question, and I apologize in advance for its foolishness and naivete.

Do you feel that there is sufficient pressure on the Soviet leadership to achieve improvements in the civilian standard of living to make up for the vast shortages that pervade Soviet life, the shoddy, crummy standards of workmanship, the quality of goods that are available, for that to become an important factor in inducing them to be more forthcoming at the conference table, in limiting armaments so that they can divert resources from military enterprises of all kinds into their civilian sector?

In the absence of a voting public, in the absence of a consumer movement as we know it, in the absence of civic and community organizations and spokesmen of any kind, in the absence of any disparate voices other than the voice of government, other than the will of the Andropov administration to improve the quality of life, is there any measurable pressure on them to divert resources from the military to civilian purposes that would have any kind of meaningful impact on their willingness to be somewhat more forthcoming in negotiating arms limitations than they have been up until now?

Mr. GATES. It is, I think, a mistake to say, as it is sometimes put by people, that the Soviet leadership is totally immune or oblivious to the problems of the quality of life of the Soviet people. They need look no further than to the country on their western border,

Poland, to see that the consequences of ignoring the state of being of their general population has political risks.

It is particularly true in a country like Russia where periodically, over the past several hundred years, there have been extremely violent uprisings of popular discontent. They are rare and they have been put down with extraordinary harshness, but nevertheless they have occurred.

So the leadership cannot be oblivious to these concerns.

By the same token, I think our perception is—and I would defer to my colleagues for further comment—I think our general perception is that they are not prepared to do more than they absolutely must to keep the populous minimally satisfied. They are not prepared to make the kind of resource allocation to consumer goods and to make the changes in the economic structure to provide for the growth of service industries and that sort of thing that would do more than feed the people on a fairly unexceptional diet and provide some consumer goods, often of very poor quality.

If the Soviets choose over the next several years to change their allocation of resources, that change in resources is more likely to go to greater investment in heavy industry, to investments in agriculture and in energy than into the consumer sector. They will make some gestures in that direction; they will make some very highly publicized moves to try and persuade people that they are doing more for them. But fundamentally the consumer is not a particularly high-priority item to the Soviet leadership.

They are particularly not a high-priority item when the Soviets believe that their national interests dictate a further growth in defense spending. This has been traditional Soviet practice. Those who are Andropov's principal supporters in the leadership represent those elements of the economy that have favored the development of heavy industry in part because of its relationship to the military.

So it seems to me that the Soviets are aware of the need to pay some attention to the consumer, but they do not regard it as an item of significant pressure.

Mr. NOREN. I would amplify that a bit. Andropov, as we made clear in the submission, has signed on to the food program that Brezhnev introduced in May 1982. That program results in an allocation to agriculture of almost one-third of all funds for new fixed investments. That is about the ratio that had been sustained through Brezhnev's last years, and it is a very heavy resource cost.

I think in terms of the investment, the allocations to agriculture and to the food industry and the associated support industries, that that is a commitment to the consumers.

I would say that in the 1970's, after 1975 as Mr. Gates has suggested, the regime reacted to circumstances that were beyond its control, which originated in part from mistaken investment decisions, misallocation of investments, and most of all, a misjudgment of the productivity gains that would be forthcoming to sustain economic growth. Those planned gains were not realized.

As a result, you did not have enough production on the supply side in terms of metals and other industrial materials, and following that, machinery, to support the kinds of investment programs they wanted.

I think you were talking earlier about policy decisions. The policy decision was an adaptation to circumstances. In those circumstances, I think the military took its lumps along with the civilian programs.

Representative SCHEUER. I did not get that last sentence.

Mr. NOREN. I think the military took its lumps along with the civilian programs.

#### ENERGY

Representative SCHEUER. Let me ask some questions about energy.

I understand from your testimony, which I unfortunately missed, that you have more or less revised your estimates that oil production would decline in the early 1980's, and now your best estimate is it will decline in the late 1980's. Is my understanding correct? If it is, can you tell us why it will decline at all in the late 1980's, how sharp or how little that decline will be, and what its impact will be on reduced exports of oil to Soviet client states in Western Europe and elsewhere?

Mr. HAUS. Well, a decline is not foreordained. As I indicated before you arrived at the subcommittee hearing, Soviet reserves are, in theory at least, more than ample to support some increase in production throughout the rest of this decade. The key variable will be the level of effort the Soviets are able to make, because the basic problems they are facing are that the reserves tend to be increasingly farther and farther away from centers of development, and they tend to be deeper. In other words, they tend to be less accessible in general, and that raises the cost.

To give you an indication of how investment requirements have been increasing, from 1970 to 1980 the cost of producing a barrel of oil essentially tripled in the Soviet Union. From 1980 to 1985 the Soviets plan to nearly double the amount of resources—in real terms—that they are committing to the oil effort. If they want to continue to see growth through the end of this decade, they would effectively have to triple, based on our calculations, those resources, and they have talked about this themselves.

Our judgment is that in the most likely case, given, on the negative side, the increasing difficulty of developing the reserves they have, and, on the positive side, the fact that they have been having some small successes on the conservation front at home, coupled with the advent of gas sales to Western Europe on a much greater scale, we think probably what will happen, if current trends play out, is that some time in the second half of this decade Soviet oil production will probably level off, and the Soviets will allow it to decline. This, however, does not have to be the case.

There are, however, a number of risks on the down side to the Soviets, not the least of which is the fact that most of their largest major producing fields, which had really carried them through the 1970's, will have dropped by 2 to 3 million barrels a day output between the current time and 1990.

So they are in a situation in which they are constantly having to work harder. We think that they will probably take advantage of the gas sales, take advantage of certain conservation measures

they are trying to introduce, and allow production to fall a bit. It will not be a sharp drop. At the outside by 1990 they should be producing at least 11 to 12 million barrels of oil a day.

Representative SCHEUER. From what you are saying, their experience roughly parallels ours.

Mr. HAUS. That is correct.

Representative SCHEUER. At a time of increasing energy costs the response has been more conservation and probing higher priced resources, and somewhat less of a production. So it is almost the same reaction that the market forces would have produced. Their central planning has produced sort of a mirror image of what our market forces have provided in this country.

Thank you, Mr. Chairman.

Senator PROXMIRE. Senator Sarbanes.

Senator SARBANES. Thank you, Mr. Chairman.

#### REASONS FOR REVISED ENERGY ESTIMATES

First, Mr. Chairman, I want to commend you for again holding these hearings as part of a series that you have now done, I think, over a decade. I think they make an enormous contribution to the record and to the material available to the Congress, and to the extent that it can be released, available to the public. I simply wanted to register that at the outset.

I think this is an example of the kinds of hearings we ought to do more of, and not immediately focus on some current problem, but trying to develop a deeper base of understanding out of which we can make lots of decisions.

Let me first pursue the energy question which Congressman Scheuer was on.

You say on page 3, "All things considered, the energy picture implies much less of a constraint on growth of the domestic economy than we thought last summer."

As I read this rather quickly, and I apologize for not being here earlier, there is a substantial revision of your views on the energy question. Is that fair?

Mr. GATES. Yes, sir.

Senator SARBANES. Why? What was it that we have discerned over a few months or a year at most that led to a substantial revision in this estimate?

Mr. GATES. We asked for a major reevaluation of our estimates on Soviet energy about a year-and-a-half ago, and what you see in front of you are the results of both a considerable amount of new data and a great deal of new analysis, and I would like to take just a moment to ask Mr. Haus to discuss both of those with you.

Mr. HAUS. When we did our original work in the late 1970's—specifically in 1977—most of the analyses and most of the data that were available to us on Soviet oil and the rest of the Soviet energy sector come from unclassified sources, and at that time most of those sources pointed to serious problems. Many of those problems in fact still exist.

Since 1977, and this has been a gradual process rather than one that occurred overnight, we have been introducing a variety of

techniques that permit us to take a look at the Soviet energy picture—particularly their petroleum situation. [Security deletion.]

We have therefore been able to get a much better, more rounded view, and that has been principally responsible for the change in our judgments on Soviet oil reserves. Our views on Soviet gas reserves have always been that they were very substantial. For oil, however, there has been a major change.

Something else has happened. We have found that we underestimated the ability and the willingness of the Soviet leadership to make the kind of effort they would need to, in terms of drilling and in terms of exploration and development work, to keep oil production growing.

In the late 1970's, not long after our estimate appeared—that is, the Agency estimate—and the subsequent discussion that took place in the press and in this committee, the Soviets made a major effort to turn the situation in West Siberia around. In fact, Brezhnev himself, along with Kosygin, went out and took measures to increase production in West Siberia. And it worked. We have seen a doubling and tripling over a 5-year period of the inputs there, and that has made a difference. They have had the reserves there to permit them to do that, although it is getting harder.

#### 5-YEAR PLAN PROCESS

Senator SARBANES. On page 11 you say that “Andropov must soon decide how to approach the defense spending and resource allocation issue because the planning cycles for the 1986-90 plan is already underway.”

Once the Soviets are into a plan, to what extent do they become locked into it and to what extent can they adjust a plan?

Mr. GATES. They can make adjustments. There is no question about it. In fact, perhaps one of the best examples of their willingness to interrupt the plan is the case that Mr. Haus just indicated. In the 1976 to 1980 plan the Soviets interrupted it midway to throw enormous new resources into energy exploration, and it is one factor that helped unbalance in some respects the rest of the economy as well.

But in terms of their more regular procedure and their flexibility, let me ask Mr. Noren to address that.

Mr. NOREN. Well, on the particular point of the planning for military programs, I think we have decided that they do pay a great deal of attention to the 5-year plan. New programs typically are coordinated with civilian programs within the context of 5-year plans. That does not mean that they do not adapt to circumstances and then stretch out programs as required. We think they did so in the 1976-80 plan.

Senator SARBANES. Does that mean if you were trying to influence the directions in which the Soviets would be committing their resources, to the extent that relates to their perception externally as well as internally, that the better time to do that is as they are leading up to decisions for a 5-year plan and somewhat more difficult in the course of the 5-year plan to get them to shift direction or priorities?

Mr. NOREN. I think it would be true to say that the more influential decisions, both in military and civilian programs, are made in the 2 years preceding the beginning of the 5-year plans.

Mr. GATES. I might add, Senator, that as part of a military 5-year plan the military prepares an assessment of the external threat, and both of these activities, their assessment of the world environment and then their actual plans, are as Mr. Noren indicated, prepared in the 1½ or 2 years prior to the beginning of the new plan.

#### ECONOMIC STRENGTHS AND WEAKNESSES

Senator SARBANES. In the operation of their economy, in what areas do you see them as being the strongest in terms of their economic efficiency and in what area the weakest? To put the question even more direct, if the West is trading with them, what trade is it that helps them the most because it picks up an area where they are inefficient and therefore have to devote heavier resources in order to handle the problem, as compared to areas that are more efficient and, therefore, they have to devote less resources to?

Mr. NOREN. I think one important area clearly is agriculture. Along with grain we also must remember that they buy a considerable volume of other agricultural products and foodstuffs. It would be very expensive for them to expand production of these commodities in the Soviet Union. So what they can do is save considerable resources for example, by importing agriculture products, and, if they can, by selling gas, because gas production can be expanded much more cheaply than the production of agricultural products.

Senator SARBANES. I cannot find it now, but somewhere in here you talk about their foreign currency balance. Do you recall where that is?

Mr. NOREN. Foreign trade is discussed beginning on page 10 of the briefing paper we submitted.<sup>1</sup>

#### HARD CURRENCY PAYMENTS POSITION

Senator SARBANES. I take it they are paying for the grain imports essentially with the energy exports, is that right?

Mr. NOREN. That is right.

Senator SARBANES. What prompted them to make what I perceive, at least as I read the text here, to be this major effort to improve their hard currency payments position in 1982? They slashed the deficit actually to one-third of what it had been the previous year and had record high assets in Western banks, half of their total hard currency debt. What led them to do that?

Mr. NOREN. Senator, in the late 1970's their payment position had been relatively good because of a high volume of energy exports and a rise in the price of energy exports.

In 1979-81 the volume of their energy exports leveled off and then declined. They found themselves in a position in which their gross debt, their hard currency debt to the West, went up from \$17.9 billion in 1980 to \$20.9 billion in 1981, a rise of \$3 billion in 1 year.

<sup>1</sup> See briefing paper beginning on p. 293.

This was at a time when they were watching Eastern Europe and seeing what had happened to Polish debt, Romanian debt, and in most of the East European countries the debt to the West had been rising. In addition, the prices the Soviet Union received for energy exports fell in 1982.

They obviously determined that they were going to do something about that. They attacked the problem in several ways. First, they cut back on their orders for Western machinery; second, they instituted in 1982 a 10-percent reduction in petroleum exports to most of Eastern Europe; third, partly because of slower economic growth at home, the growth in home consumption of energy diminished considerably.

#### ECONOMIC PRESSURES

Senator SARBANES. Where do you see the economic pressures working on Andropov and the leadership there as they approach this decisionmaking for the next 5-year plan, 1986 to 1990, which I take it is in the process now of being formulated?

Mr. NOREN. I think the single most important problem that the leadership faces is how to make the system more productive. They are clearly going through a period when they cannot use the same old formulas to maintain or revive growth. In some of the materials we submitted to the committee we illustrated the slowdown in the rate of growth of the labor force; because of reduced rates of investment growth the growth in capital stock is going to be less. They have to make up the difference in productivity.

We understand that the machinery sector in particular needs a substantial dose of investment for modernization. Part of that has to do with finding the investment resources to provide that modernization. They also know that they have to do a better job of introducing new technology, whether it is domestic or from the West. They have access to substantial amounts of new technology, but they have a very great difficulty in assimilating it. Improvement in this area requires some changes in the system that would in fact induce faster assimilation of technology. As our submission suggests, we are fairly pessimistic that that will come about, that large improvements will come about in that area.

Senator SARBANES. My time is up. I have a couple more questions that I will defer.

Senator PROXMIRE. Why do you not go ahead.

#### TWO-TRACK ECONOMY

Senator SARBANES. I guess there is a view on our part that the Soviets effectively run a two-track economy. They have a military which is efficient, productive, and high quality and all the rest of it; then they have the rest of the economy that everyone characterizes as inefficient, unproductive, shoddy quality and all the rest of it. Is it your view that that is the case? And if so, how do they accomplish this complete bifurcation of being able to be efficient in one place and grossly inefficient in another?

Mr. GATES. Let me address that and then I will ask Mr. Noren and Mr. Licari to fill in some of the details.

To a certain extent that is not an inaccurate description, in that the military has first call on high quality goods and first call on technology, first call on investment resources, first call on labor force, and so on. Perhaps it is not as much a two-track economy as it is a system under which the military gets to pick off the best, whether it is an assembly line or people or anything else.

What we are seeing and what we are documenting this year really for the first time is that those two tracks are not completely separate. When the remainder of the economy—transportation, the railroads, the steel industry, the cement industry, and so on—reaches a certain level of poor performance it does begin to impact on the military because there is not enough there for the military to be able to achieve all of its objectives.

This gets at the issue that I was describing earlier for the chairman, and that is the possibility—we do not have any direct evidence of it—that there may even be a split within the military about whether to maximize allocations to defense programs out of current resources or whether they see their longer-term interests as better served by perhaps taking a little less now and seeing more invested in trying to overcome some of the problems in the other sectors of the economy that now, we believe, are beginning to be something of a drag on their procurement capability.

Let me ask my colleagues to add to that.

Mr. LICARI. Senator, I would add simply one thing. As the Soviet economy shifts to more emphasis on high technology goods, and especially in the defense sector, I think the problem with quality will be very important there as well. The insulation, as Mr. Gates said, that we had conventionally viewed as existing between the civilian sector and the military sector, can break down. As high technology goods become more important on the military side, quality becomes more important. Then, even the military side begins to suffer from the same kinds of problems that occur in the civilian economy.

Senator SARBANES. Thank you, Mr. Chairman.

#### IMPROVEMENT IN CHINA'S ECONOMY

Senator PROXMIRE. Mr. Gates, you and your colleagues have been very good in responding to questions. They have been detailed and helpful. I am going to ask a series of questions on China, of Mr. Phillips, I presume, primarily, and I am going to ask Mr. Phillips to be as concise as he can, and see if he can answer each one in less than a minute. If so, then I can yield to my colleagues and we can finish up.

I know it is hard to do in this area. And if you would like to expand on the remarks in the record, by all means do that.

Senator SARBANES. You ought to make part of the deal that the question not run for more than a minute. [Laughter.]

Senator PROXMIRE. The question will run for a lot less, I can tell you.

The first question is you report that China's economy is in much better shape than it was a few years ago, but I am not sure that you give the reasons. Will you in this brief time discuss the factors that explain the improved performance and some of the measures that illustrate the improvement?



Mr. PHILLIPS. Very briefly, and I will expand on this later. When we say a few years ago we are talking about the pre-1976 period, or the pre-1978 period, if you will. What we are saying is that there has been more attention now focused on efficiency problems. Some of the reforms have had positive effects on economic performance, particularly in agriculture. And so when we are talking about a few years ago we are talking about 5, 6, or 7 years ago.

#### INVESTMENT

Senator PROXMIRE. Why do the Chinese central planners have such a difficult time controlling investment in heavy industry and shifting emphasis to light industry, which is what they said they wanted to do several years ago? Why is that so hard?

Mr. PHILLIPS. In the first place, there are the traditional attitudes toward light and heavy industry. Heavy industry has always been considered the engine of growth in the economy, and shifting emphasis toward light industry has been a problem for planners. But even more correctly, I think, it is not a question of investment in heavy industry or light industry; the problem at the moment is one of too much investment across the economy. Very simply, if \$100 can buy you 3 projects done in a normal span of time, if instead of working on 3 projects you are working on 20 projects in that time with the amount of resources available in the economy, you cannot complete any of them on time. What is being squeezed are the large projects in energy and transport, which of course, if you think of it, are heavy industry.

So it oversimplifies the case a little bit to say that they are trying to invest in light industries rather than in heavy industry, and the Chinese have pointed to this themselves as a problem. They have to invest in appropriate parts of heavy industry as well as in light.

#### UNEMPLOYMENT AND INFLATION

Senator PROXMIRE. You gave me unemployment figures in China which shocked me and surprised me—10 percent in the cities, you said.

Mr. PHILLIPS. I think we said "up to."

Senator PROXMIRE. And inflation rates from Chinese official statistics. Are these from Chinese statistics, and if so, how reliable are they?

Mr. PHILLIPS. The 5 to 10 percent?

Senator PROXMIRE. Yes, sir.

Mr. PHILLIPS. The highest official inflation rate that the Chinese have published was about 3 years ago, and I think it ran about 6 percent. More recently, in the last couple of years, they have been publishing figures of about 1 percent, 2 percent, maybe 2½ percent.

Senator PROXMIRE. Are they reliable?

Mr. PHILLIPS. They are what the Chinese call basic price stability. We do not believe that they are reliable. The way the statistical system is put together, it does not take account, for example, of an individual who is unemployed going into a store, buying a pair of shoes, and turning around and selling it to the ultimate consumer at a higher price. Official figures do not capture that sort of hidden

price increase. That is why we put a figure of 5 to 10 percent on it. A 2-percent inflation rate in an economy would not be considered by an American to be serious. So we feel, to give the flavor, saying something like 5 to 10 percent is more accurate.

Senator PROXMIRE. How can you come close to estimating it in that fantastically complex, enormous country? Do you have an independent sample of prices.

Mr. PHILLIPS. No, sir, we do not.

Senator PROXMIRE. You do not know if it is 5 or 10 percent or 15 to 20 percent or 2 or 3 percent; do you, really?

Mr. PHILLIPS. We do believe that it is higher than the 2 to 3 percent that the Chinese are publishing, and we feel that a range, of 5 to 10 percent, which is why we do give a range, probably captures the actual inflation rate.

#### MARKET SOCIALISM

Senator PROXMIRE. China's reforms have been described as a step toward a form of market socialism. Do you see it that way? Or how would you characterize their reform movement in terms of state control versus private enterprise and how far do you believe the reforms will go?

Mr. PHILLIPS. I feel, and I think most of my colleagues would agree with me, that China is not becoming capitalist, which is one of the charges that has been leveled at them. They are working toward some form of market socialism; they are trying to work on reforms that structure incentives to try to make the economy operate more efficiently. How far they are going to go is really hard to say at the moment, primarily because some of the reforms, as we have noted in our presentation, have led to other problems—particularly the investment problem—and to some loss of control over the economy.

#### TRADE PROSPECTS

Senator PROXMIRE. In view of China's actions to control its balance of payments, how would you describe the prospects for trade with the United States over the next few years?

Mr. PHILLIPS. There have been some special elements that have entered into the trade question in the last year. We feel that prospects are favorable for certain types of products. The Chinese, for example, in their desire to move toward intensive growth rather than extensive growth, toward upgrading their current capital stock, are looking at improving current facilities. That is one area in which the United States can have some impact, and it can be favorable to bilateral trade.

At the moment, given the situation with the Chinese cotton crop, that sort of agricultural trade is not likely to grow in the near future. It is very hard to say, because there are a whole range of products, and if we can find the right sorts of goods, we feel that the Chinese are going to be willing to do business and willing to expand bilateral trade.

[Additional information subsequently supplied for the record follows:]

## UNITED STATES-CHINA TRADE PROSPECTS

We believe there is potential for continued growth in US-China trade over the next several years, although at a pace more moderate than the rapid increases of 1978-80 (see table). By 1981, bilateral trade had increased from a level of 374 million dollars in 1977 to a strong 5.5 billion dollars, and the United States is firmly entrenched as China's third largest trading partner (after Japan and Hong Kong).

In 1982, China reduced its worldwide imports by 10 percent and its imports from the United States by 19 percent. At the same time, China's exports to the United States rose 21 percent, partly on the strength of a 34-percent increase in textile sales. In first half 1983, China's imports from the United States were down a sharp 39 percent. This reflects reduced Chinese purchases of cotton and a variety of agricultural commodities that resulted from both China's domestic economic situation and its retaliation against US imposition of import quotas on Chinese textiles. Exports to the United States were up a slight 3 percent.

We expect total bilateral trade to rise next year. China's imports of cotton and synthetic fibers, we believe, will rebound, as will grain purchases from the United States. We also expect US suppliers to take part increasingly in the upgrading of China's industrial facilities planned that is for the next several years. US imports of textiles from China will also continue to grow, boosting that side of the trade equation.

## UNITED STATES-CHINA TRADE

(In millions of Dollars)

	1976	1977	1978	1979	1980	1981	1982
U.S. exports .....	135	171	865	1,724	3,755	3,603	2,912
U.S. imports .....	202	203	324	594	1,058	1,875	2,275
Balance .....	-67	-32	541	1,130	2,697	1,728	637
Annual change, total trade (percent) .....		11	281	95	108	14	-5

(Dollars in billions)

	Jan.-June 1982	Jan.-June 1983	Percent change
U.S. exports .....	\$1,707	\$1,034	-39
U.S. imports .....	1,041	1,071	3
Total trade .....	2,748	2,105	-23

## DEFENSE SPENDING

Senator PROXMIRE. Will you summarize China's recent defense policy with respect to total spending and spending priorities?

Mr. PHILLIPS. I am afraid that I am not equipped to do that.

Senator PROXMIRE. Will you do that for the record?

Mr. GATES. Yes.

[The following information was subsequently supplied for the record:]

## CHINESE DEFENSE SPENDING

Our estimate of expenditures for defense shows that outlays grew steadily in real terms during the late 1970s and peaked in 1979 to pay for the War against Vietnam. [Security deletion.]

Since 1979, China's well publicized economic retrenchment has forced cutbacks that in 1981 brought expenditures for defense to their lowest level since the early 1970s. The defense budget made a modest recovery in 1982, rising by 6 percent. Pro-

jections for the Sixth Five-Year Plan (1981-1985) suggest that spending will hold at the 1982 level through at least 1985.

We believe a share of defense spending is being allocated to weapons development and procurement of new weapons. Progress made in recent years in trimming the size of the armed services and phasing out the production of outdated weapons is freeing funds for weapons research and the production of a new generation of weapons. Defense Minister Zhang Aiping, in a recent party journal, calls development and production of sophisticated military hardware the "first task" in defense modernization.

An additional, often overlooked, source of defense funding is Beijing's profits from international arms sales. [Security deletion.] Moreover, defense plants now use excess production capacity to produce consumer items for both domestic and foreign markets. We believe a portion of the profits from those measures will be used to support weapons research and development and help modernize defense plants.

China almost certainly will need to increase the military budget substantially in the 1986-90 time frame to procure weapons now under development. For the time being, lack of suitable follow-ons to the People's Liberation Army's (PLA) most expensive weapons, such as aircraft and armor, will obviate a call for greater defense spending. Moreover, the PLA leadership's apparent acceptance of current spending levels—in expectation of reaping benefits from overall economic improvement—should help to prevent the military budget from becoming a major area of contention through 1985.

Senator PROXMIRE. We have heard testimony on China's industrial espionage activities to illegally obtain technology from the United States and the West. Will you discuss this and also explain why the fact cannot be made public?

Mr. PHILLIPS. I would prefer to do that for the record, if I might. I am not an expert in this sort of thing, and I do not want to overstep my bounds.

[The information to be supplied for the record is a security deletion.]

#### CHINESE-SOVIET RELATIONS

Senator PROXMIRE. Finally, I would like you to discuss the possibility of a Sino-Soviet rapprochement in light of recent events. What is the possibility of them getting together again?

Mr. PHILLIPS. Again, I have to plead that I am not an expert in this, but my own feeling, looking at what has gone on over the past few months, is that there has not been substantial movement in this direction. There are longstanding problems between the two countries.

I think I have just run up to 30 seconds. Maybe Mr. Gates would like to add something to that.

Senator PROXMIRE. Well, that is pretty important.

Mr. GATES. We believe that there is some opportunity for the relationship between the two countries to improve, particularly in the economic and trade areas, cultural relationships, perhaps improved diplomatic relationships, and perhaps at some point improved party-to-party relationships. However, it seems clear to us that the fundamental differences that have divided the Soviet Union and China over the past 25 years remain. There may be some accommodations on the border and so on, but they are basically antagonistic powers and they have been for a number of years. Even at the so-called height of their relationship there were serious differences that were simply submerged.

What you have particularly, it seems to us, at this point is two powers, both of whom have a real interest in persuading a third

power that they really are going to get along a lot better. I think both of them view the warming trend between them as being of particular value in terms of strengthening their bargaining power or leverage with the United States. So to a certain extent we think that they probably put a little better face on the relationship than it really deserves at this point for their tactical, diplomatic purposes. There is some room for improvement, and I do not think any of us would be surprised to see that happen. But there are very real limits as to how far it will go.

Senator PROXMIRE. I want to thank you very, very much.

Did you have another question, Senator Sarbanes?

Senator SARBANES. Mr. Gates, could you just briefly set out what you regard those fundamental differences as being that provide this basis for perceiving that the relationship is fundamentally antagonistic?

Mr. GATES. One of the differences is territorial. The Chinese regard the Soviet Union as occupying several million square miles of territory that historically was Chinese; they regard the Soviets as a security threat in view of the 45 to 50 divisions that sit on their border; there has been very little talk by the Soviets or the Chinese of any progress in that relationship.

The Chinese themselves have set three conditions for any real improvement in relations: For the Soviets to stop backing the Vietnamese in Kampuchea; for the Soviets to get out of Afghanistan; and the third is to reduce significantly the Soviet military pressure in Mongolia and along the Chinese border with the Soviet Union. The Soviets have indicated no flexibility in any of those three areas.

Finally, there is the ideological aspect, even though Mao is dead. I come at this from the standpoint of someone whose background is in Soviet affairs, so my colleagues down at the end of the table may have different views. We have some differences of view between our Soviet and Chinese analysts that sometimes parallels the Soviet-Chinese split. But from the Soviet standpoint, I think they cannot be optimistic that the Chinese will ever be willing to recognize Soviet primacy in the Communist movement. Indeed, the Chinese have their own pretensions from the Soviet standpoint of being a second center of ideological truth, and that is unacceptable to the Soviet leadership.

So these are some of the fundamental differences.

#### ECONOMIC REFORMS AND THE HUNGARIAN MODEL

Senator SARBANES. Andropov has talked about economic reforms, and you discussed that to some extent here. I take it that it is your view that there is an entrenched bureaucracy which makes significant reforms difficult, but in any event he is only talking about doing it on a pilot basis and therefore the impact of that would not be very great in any event. The one thing we do know about him—we have all these ideas floating around about him, and no one really seems to know for sure—but we do know he was the Ambassador in Hungary and presumably has followed developments in that country closely. Do you think there is any indication they would try to move to a Hungarian model?

Mr. GATES. My view would be that even if Andropov wanted to do that that he would run into substantial opposition within the Politburo. As we were discussing earlier, I think there is probably a general perceived need on the part of the Soviet leadership to do something about their economic problems. One reason why Andropov was selected as General Secretary was probably because there was a perception that he was a man of action who could do something about these problems. I think our view is that the consensus falls apart when it comes to considering specific measures that one might take.

Additionally, while Andropov may be somewhat sympathetic or willing to tolerate the Hungarian experiments, I think there is a generally perceived view on the Soviet part that for a small country like Hungary to implement those things is one thing; for a huge country with an economy the size of the Soviet Union to try and do so would be not only very risky, but quite unwise. My guess is we are not likely to see the Soviets move in that direction.

Senator SARBANES. The Chinese have done some of that, is that not right?

Mr. PHILLIPS. They have done some of it, and, in fact, they most recently have been talking quite a bit about the Hungarian reform.

Senator SARBANES. I notice in agriculture you say their output jumped 11 percent in 1 year's time.

Mr. PHILLIPS. Yes. Partly due to reforms, as it points out, but also partly due to changes in the procurement prices.

Senator SARBANES. Partly due to what?

Mr. PHILLIPS. The procurement prices, the prices the Government pays to procure agricultural products, which have been raised several times in the last 3 or 4 years. It is hard to separate out the relative importance of those two steps.

Senator SARBANES. Thank you, Mr. Chairman.

Senator PROXMIRE. Thank you, Mr. Gates and gentlemen. You have certainly done an outstanding job. We are very grateful to you. You have made a fine record.

I hope you can sanitize the hearings as soon as possible and be as generous as you can in making that information available because I think it is critical for public understanding.

Thank you very, very much.

The subcommittee will stand adjourned.

[Whereupon, at 12:30 p.m., the subcommittee adjourned, subject to the call of the Chair.]

# APPENDIX

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JOINT ECONOMIC COMMITTEE BRIEFING PAPER

USSR: ECONOMIC TRENDS AND POLICY DEVELOPMENTS

OFFICE OF SOVIET ANALYSIS  
CENTRAL INTELLIGENCE AGENCY

14 September 1983

(293)

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Introduction

When Yuri Andropov became General Secretary of the Communist Party of the USSR, economic growth rates had been falling, the increase in per-capita consumption had come to a halt, and resource allocation decisions between military and civilian needs were becoming more difficult. Externally the Soviet Union was providing support to the stagnating economies of Eastern Europe (particularly Poland) and fighting a costly war in Afghanistan.

With the first anniversary of Andropov's rise to power approaching, we review in this paper his policies and programs and assess their impact on the economy and on military spending. The paper first summarizes the performance of the Soviet economy in 1981-82 and the reasons for the sluggish economic growth during this period. The economic policies being pursued by Andropov, insofar as they have been revealed, are then described, and the effect that these policies have had and are likely to have on economic growth in the near term is assessed. In the final section, we turn to the longer term outlook for Andropov's economic and defense policies and for the economy in general.

Economic Performance in 1981-82

In the first two years of the 11th Five-Year Plan period (1981-85), growth in Soviet gross national product (GNP) averaged about 2 percent per year, somewhat above that attained during 1979-80 but well below both the rate achieved during the 1970s and the rate implied by the 1981-85 Plan (figure 1). The 1981-85 Plan depended on a strong turnaround in the rate of growth of the combined productivity of labor and capital. Instead, factor productivity in the economy declined in 1981-82 by about one percent per year. General Secretary Andropov found almost every sector of the economy lagging behind plan when he took office in November 1982.

Industry

The slowdown in the growth of industrial output was especially worrisome. In 1981-82, average annual growth was less than 2 1/2 percent, about half the rate called for in the 1981-85 Plan (figure 2). Two developments during this period were particularly noteworthy: (1) the slowdown was evident in practically every industrial branch, and (2) the trend in the productivity of labor and capital employed in industry was down dramatically. Despite considerable effort, the Soviets were unable to halt the deterioration in efficiency with which combined inputs of capital and labor are used in the USSR. Factor productivity in industry declined at an average annual rate of roughly 1 1/2 percent during 1981-82.

Energy and Raw Materials. The growth of energy production in the USSR has decelerated significantly. After three decades

Figure 1

USSR: Average Annual Percentage  
Growth of GNP

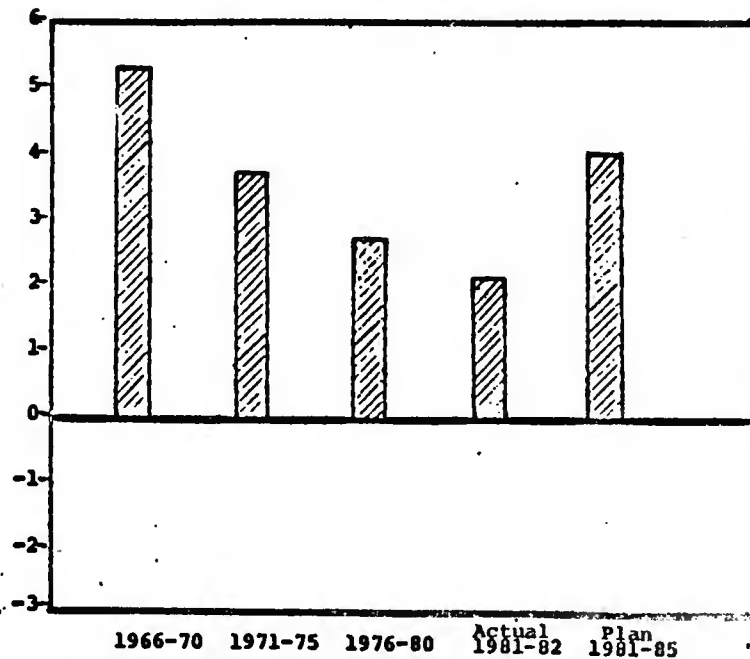
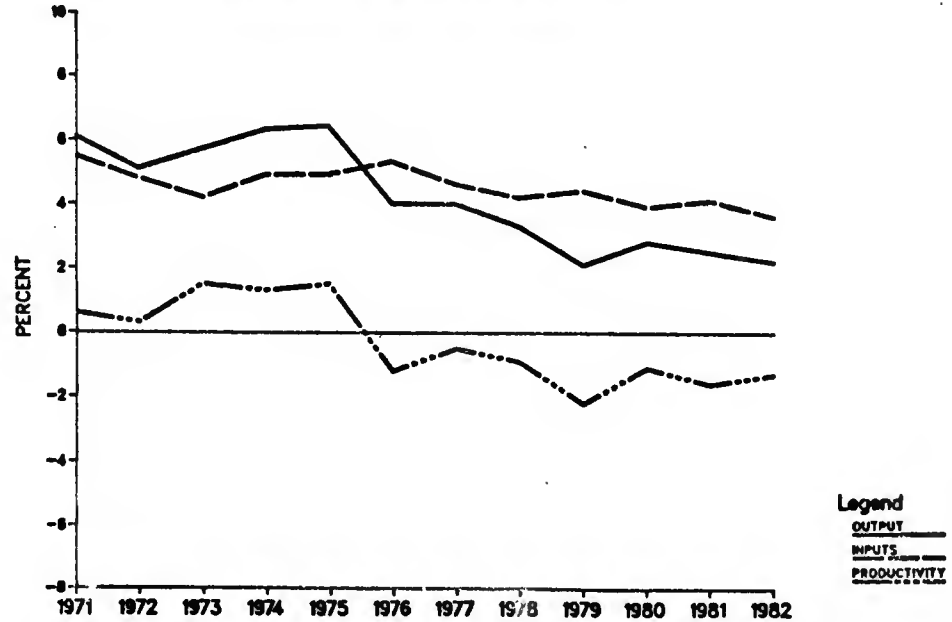


Figure 2  
GROWTH IN OUTPUT, INPUTS, AND  
PRODUCTIVITY IN SOVIET INDUSTRY



of growth, oil production in the USSR has begun to level off, although--as explained below--the prospects for the future are considerably better than we once thought. Production of oil (including gas condensate) has inched forward during the current five-year planning period and now stands at 12.4 million barrels per day (b/d). While gas output grew rapidly in 1981 and 1982, raw coal output increased in 1982 for the first time since 1973.

Widespread shortages of raw materials were a major reason for the marked slowdown in industrial production in 1981-82 (figure 3). Declining growth in production of coal and its deteriorating quality, for example, hurt electric power and ferrous metallurgy. Shortages of electric power, in turn, impaired the performance of industrial power customers, and an insufficient supply of steel products contributed to the lower growth in machinery production. Shortages of coke and refinery byproducts also hindered production of important chemicals, curtailing production in the interdependent branches of the chemical industry.

Machinery. Stagnation in the output of rolled steel products in 1981-82 held back growth in the machinery branch of industry. Machinebuilding is a pivotal sector, producing military hardware as well as consumer durables and machinery for investment. The low rate of growth of machinery output--only 3.2 percent annually during 1981-82--is about half the rate planned for 1981-85 and by far the lowest since World War II.

Even this slower growth of machinery output depended in part on rising imports of rolled ferrous metals. Imports of steel

Figure 3

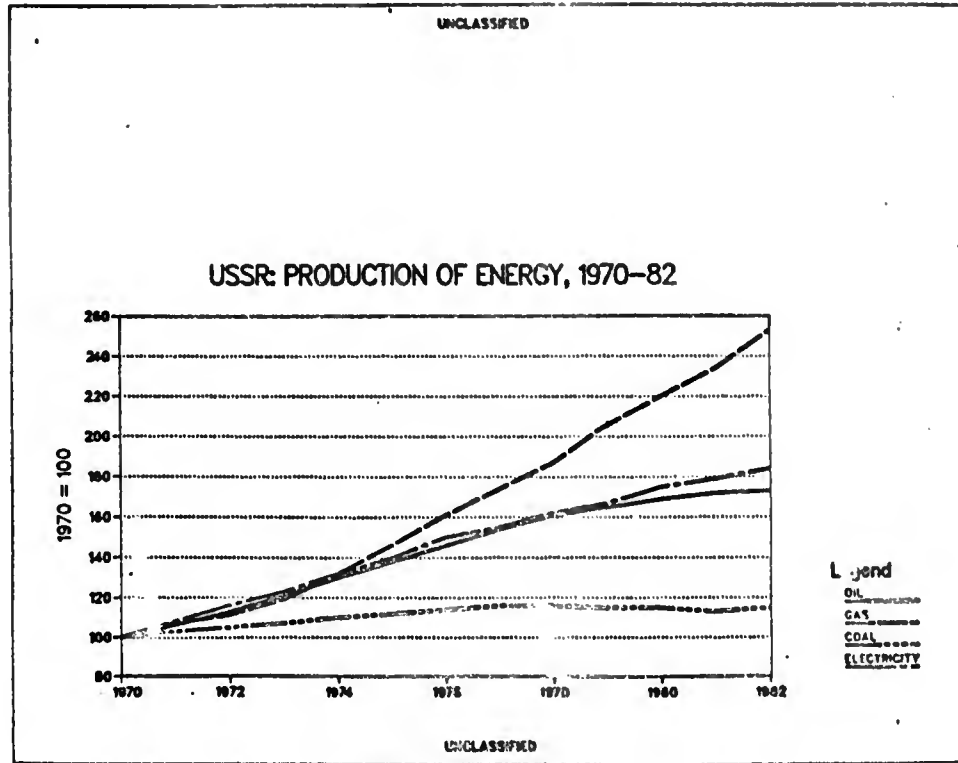
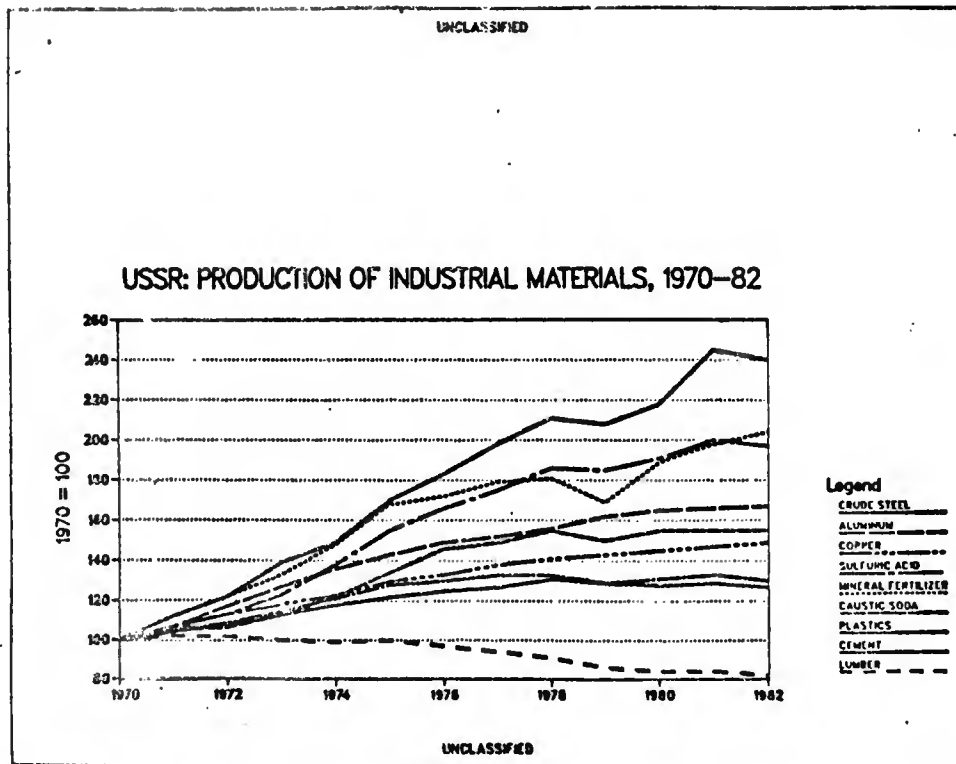


Figure 3 (cont.)



products, for example, totaled \$5.3 billion dollars in 1982. The Soviets also stepped up imports of machinery and equipment from the West and from Eastern Europe.

The hard choices on resource allocation facing Andropov are most evident in the machinery sector. The share of machinery and equipment in total investment has been rising as part of a strategy that emphasizes increased renovation and modernization and less new construction. This share, in fact, climbed from about 33 percent in 1975 to roughly 38 percent in 1981 and is planned to increase to more than 42 percent in 1983. At current levels of investment, the use of machinery and equipment for domestic investment is rising by as much as 7-9 percent per year. Meanwhile, the regime would like to push production of consumer durables so as to reduce some of the unsatisfied demand in consumer markets. But the 3-percent average annual growth of machinery output achieved in 1981-82 suggests that the investment-defense-consumer competition for machinery products will become increasingly fierce.

The pressure on allocations to investment and the consumer could be eased in the near term in two ways: by holding down the growth in production of military hardware and by increasing net imports of machinery. In the longer term, more investment in the machinery sector and its supporting branches is needed.

Consumer Goods. The growth of output in light industry and food processing during 1981-82 paralleled that of industry as a whole. Despite large imports of grain, sugar, and other farm products, shortages of agricultural raw materials contributed to



the weak performance of food processing and (to a much lesser extent) of light industry in 1981-82--although the impact on overall industrial performance was not large. Difficulties in attracting and retaining a qualified work force and low worker morale also constrained production. Compared with other industrial sectors, average wages in these two branches are lower and working conditions poorer.

#### Agriculture

The value of agricultural output, almost the same in 1981 as in 1980, increased by somewhat more than 3 percent in 1982. USDA estimates grain production at 180 million tons last year--an increase of about 20 million tons over 1981 but some 55 million tons short of plan. In the crucial livestock sector, meat output rose only fractionally in 1982 while milk production turned upward for the first time since 1977. Production of fruits and vegetables reached record levels and output of potatoes, sugar beets, and sunflower seeds increased substantially over the depressed levels of 1981.

Despite the 1982 upturn, farm output was still nearly 7 percent below the 1978 peak-year level. In fact, the results for 1981-82 have put most of the 11th Five-Year Plan agricultural production goals beyond reach. To reach the target for grain output, for example, annual production in 1983-85 would have to average 285 million tons--nearly 50 million tons greater than the record crop of 1978.

Transport

A substantial share of the responsibility for the falloff in industrial growth must be assigned to bottlenecks in the transportation of both raw materials and finished products. Plants were shut down intermittently, production lines were disrupted as machines and workers stood idle for lack of raw materials, and finished products piled up on loading docks. Total freight turnover, which had increased at an annual rate of 3.5 percent during 1976-80, actually fell by 0.2 percent last year.

The principal culprit has been the railroads, which shoulder the major part of the transportation burden in the USSR. The railroads are approaching the limit of their capacity to move ever more freight on the existing network with existing technology. Shipping natural resources from extraction areas in Siberia to processing and production centers in the Western parts of the USSR, in particular, has increased the strain on the railroads.

Consumer Well-Being

As Andropov noted in his early speeches, much remained to be done in the area of consumer welfare when he took office. According to our estimates, total per capita consumption increased in 1981 by about one percent--but then declined in 1982 by almost one percent. The official figures released by the Soviets confirm that in 1982 the USSR's standard of living at best barely held its own:

-- "Real per capita income"--a constant-price measure of consumption minus some services--levelled off.

-- Per capita retail sales (in constant prices) declined by more than 1/2 percent.

Meanwhile, the availability of quality foods declined generally. Per capita meat consumption, for instance, was down slightly in 1982 from its peak 1979 level.

Because food accounts for the largest share of the Soviet family budget and shortages must be dealt with on a daily basis, changes in food supplies are the Soviet citizen's leading barometer of his standard of living. Fearing widespread consumer dissatisfaction, the regime took steps to minimize the impact of food shortages on worker morale and productivity. The system of special distribution of foodstuffs through the workplace (which originated in the late 1970s and is considerably more extensive than the traditional system of special stores for selected elites) was substantially expanded.

Some signs of unrest--such as short-lived work stoppages--occurred during 1981-82, but expressions of discontent generally were contained or averted. Faced with long lines at state outlets, consumers dealt with the shortages in ways that did not threaten the regime--by buying higher-priced foods in the officially sanctioned free markets, for example, and through barter and black-market activity.

#### Defense

The discussion above centered on the general performance of the Soviet economy during the last two years. The issue of

Soviet military expenditures requires a longer-term focus. Our approach to defense-spending estimates yields much more confidence in medium- and long-term trends than year-to-year movements. In addition, we have recently revised our estimates in this area.

Our latest estimate of Soviet military expenditures indicates that defense spending in constant 1970 ruble prices continues to increase.\* Unlike our past estimates, however, the new evidence incorporated in our present estimate indicates that in at least one major area, procurement of military hardware, Soviet expenditures have leveled off since 1976.

Total Soviet defense costs, measured in constant 1970 rubles, grew at an average annual rate of 4-5 percent during 1966-76 (about the same as reported in earlier estimates). Our new estimate, however, shows that like overall economic growth the rise in the total cost of defense since 1976 has been slower--about 2 percent a year. The rate of growth of overall defense costs is lower because procurement of military hardware--the largest category of defense spending--was almost flat in 1976-81.

New information indicates that the Soviets did not field weapons as rapidly after 1976 as before. Practically all major categories of Soviet weapons were affected--missiles, aircraft, and ships. This phenomenon was only partially offset by the

\* We estimate Soviet defense spending annually in rubles to gain an appreciation of the Soviet defense "burden". See appendix A for a discussion of the methodology used.

tendency of newer, more sophisticated weapon systems to cost more. Costs in all other categories of Soviet defense continued to grow at historic rates over the entire 1972-81 period. Operations and maintenance costs, for example, grew by 3-4 percent annually; personnel costs increased by slightly less than 2 percent a year.\*

We have only very preliminary estimates available for 1982. They indicate, however, that the trends in both total defense expenditures and procurement costs that we have observed since 1976 are continuing. The growth in total expenditures still appears to be considerably below the long-term average, and procurement spending remains roughly unchanged although at a high level, when measured in constant 1970 prices.

It should be stressed that trends in Soviet military spending are not a sufficient basis to form judgments about Soviet military capabilities, which are a complex function of weapons stocks, doctrine, training, generalship, and other factors important in a potential conflict. The cost estimates are best used to identify shifts in priorities and trends in resource commitments to military programs over an extended period of time. Moreover, the spending estimates do not give an appreciation of the large stocks of strategic and conventional

\* Our latest dollar estimates show the same trends since they are based on the same estimates of quantities of Soviet weapons. The estimated dollar costs of Soviet defense activities grew at slightly less than 2 percent over the 1976-81 period, a percentage point below the long-term average. Procurement costs in dollar terms did not grow during the 1976-81 period. We estimate Soviet defense spending in dollars to make comparisons with corresponding US outlays.

weapon systems already deployed. Indeed, current levels of spending are so high that despite the procurement plateau noted, the Soviet forces have received since 1975 about 2,000 ICBMs and SLBMs, over 5,000 tactical combat and interceptor aircraft, 15,000 tanks and substantial numbers of major surface combatants, SSBNs, and attack submarines.

The impressive dimensions of the Soviet resource commitment to military activities also are very visible in comparisons with US defense costs. Our latest comparisons of US and Soviet defense programs show that despite somewhat slower growth in recent years the costs of Soviet defense activities still exceed those of the United States by a large margin. In 1981 the dollar costs of Soviet defense activities were 45 percent greater than US outlays; procurement costs alone were also 45 percent larger. A comparison in ruble prices shows that Soviet defense costs were 25 percent higher than those of the United States.

The slowdown in the growth of military procurement cannot be explained by any single factor. Initially, at least, the absence of growth in military procurement might have been attributed to natural lulls in production as older weapon programs were phased out before new ones began. The extended nature of the slowdown, however, goes far beyond normal dips in procurement cycles.

The continued slow growth since the late 1970s seems related to a combination of complex factors including technological problems, industrial bottlenecks, and policy decisions. Some funds budgeted for procurement may have been directed instead to research, development, testing, and evaluation (RDT&E) during

this period because of the increasing complexity of weapon systems being researched.

The burden of defense in the USSR--the share of GNP devoted to defense--remained roughly constant at 13-14 percent through the 1970s because defense and GNP have grown at about the same rate. We had previously forecast that the defense share would increase by one-percentage point in the early 1980s.

#### Foreign Trade

After coping successfully with an earlier runup of hard currency debt, the USSR was hit in 1981 by a rising agricultural import bill and the need to provide hard currency assistance to Poland. The volume of grain purchases jumped by more than one-third, to 39 million tons. The deficit on merchandise trade rose to \$4 billion, compared with \$2.5 billion in 1980. The gap would have been even higher had Moscow not pushed exports (mainly oil) and trimmed imports (mainly machinery and equipment) in the last half of 1981. For the year as a whole, the Soviets managed to maintain the value of oil exports at the 1980 level as a 5-percent oil price rise offset the drop in volume.

The Soviets improved their hard currency payments position in 1982. By strongly pushing oil exports and holding down imports, the USSR slashed its hard currency trade deficit to \$1.3 billion, or one-third of the deficit incurred in 1981. Exports were up 10 percent, with all of the rise coming from the sharp jump in oil sales. Moscow reduced the value of imports slightly by cutting purchases of Western grain (down 3 million tons), chemicals, and nontubular steel. Imports of machinery and

equipment and of steel pipe rose sharply, however, largely as a result of deliveries for the Siberia-to-Western Europe gas pipeline.

The easing of its hard currency payments position, coupled with a probable fall in hard currency assistance to Poland, allowed Moscow to reduce its hard currency debt in 1982. By the end of the year, gross debt had fallen by an estimated \$800 million and totaled \$20.1 billion. Assets in Western banks were a record-high \$10 billion at the end of last year.

Moscow's foreign trade policy for 1981-85 calls for an increasing share of its trade to be conducted with Communist countries. This policy probably reflects several factors: (1) a desire to hold down hard currency debt; (2) a long-standing policy of self-sufficiency, particularly an aversion to becoming too dependent on the West; and (3) a reaction to US trade embargoes that were imposed following the USSR's invasion of Afghanistan.

USSR: Percentage Growth in Foreign Trade<sup>a</sup>

	<u>1981</u>	<u>1982</u>	<u>1981-85 Plan<sup>b</sup></u>
Total trade	4.2	8.2	4.0
With Communist countries	2.3	5.3	5.6
With non-Communist countries	7.8	10.8	2.3

<sup>a</sup> Calculated from Soviet data expressed in constant prices.

<sup>b</sup> Average annual rate of increase.



In point of fact, Soviet trade turnover grew more rapidly with the non-Communist countries in both 1981 and 1982. Paradoxically, however, Soviet net gains from trade with Communist countries (measured by net imports in constant prices rose substantially--because of a leveling off of real exports--while gains from trade with the West declined. The Soviet surplus on trade with all non-Communist countries rose from 1.9 billion rubles in 1980 to 3.2 billion rubles in 1982 (including major weapons exports to LDCs). At the same time, Moscow's 1980 surplus of 3.2 billion rubles with the Communist countries decreased to a 400-million ruble deficit (in 1980 prices) in 1982. All categories of Soviet exports to Communist countries except machinery and equipment leveled off in real terms in 1982. Sales of machinery and equipment declined because of a sharp reduction in sales to Poland; Warsaw cut back drastically on investment programs and could not absorb the machinery.

#### Reasons for the Sluggish Performance

The sluggish performance of the Soviet economy in 1981-82 partly reflected circumstances that were beyond the leadership's control. It stemmed mainly, however, from resource-allocation decisions made earlier by the regime and from long standing flaws in the USSR's system of planning and administration.

#### External Factors

Agricultural production in the USSR is hostage to weather conditions to a far greater degree than in most developed economies. Poor weather, drought in particular, continued to plague the farm sector during 1981-82 as the USSR suffered its

third and fourth consecutive poor grain harvests. To a lesser extent, harsh weather also hindered construction, transportation, and industry, especially the production of electric power--a input critical to all sectors of the economy.

Economic performance was affected also by a reduction in the number of people entering the labor force. Increments to the working-age population have been declining since the mid-1970s because of the lower birth rates of the 1960s, an increase in the number of workers reaching retirement age, and a rising mortality rate among males in the 25-to-44 age range. The falloff became pronounced in 1980, and increments will remain very low throughout the decade.

A third limiting factor beyond the leadership's control was the continued escalation of the cost of extracting, refining, and transporting fuels and raw materials. Even though the Soviet Union is endowed with enormous quantities and a wide variety of raw materials, these materials in many instances have become increasingly inaccessible and the cost of exploiting them has risen sharply:

- The economy has become increasingly dependent on the Siberian areas of the country for fuels and other raw materials. Developing these new areas requires large capital investments, particularly in construction.
- Most of the new areas require social overhead capital--roads, housing, cultural, and service facilities--in addition to the basic facilities for exploration and exploitation.

-- The declining quality of readily available raw materials has pushed up capital requirements because of the cost of enriching poor-grade minerals and ores.

#### Policy Errors

Some of the difficulties of the Soviet economy in 1981-82 were the result of deliberate policy choices, as the earlier discussion of developments in industry and transportation suggests. At a time when investment needs were rising rapidly, the 1981-85 Plan called for investment spending to grow on average by less than 2 percent per year. This was by far the lowest planned increase in the post-World War II period. The marked slowdown, while partly forced upon the leadership by production constraints in the capital goods industries, also reflects a conscious attempt to switch to a more intensive pattern of growth--that is, growth through more efficient use of resources and more rapid technological progress.

In essence, the planned growth in GNP and its component sectors was predicated largely on increases in productivity. Increasing the efficiency of new plant and equipment, for example, is one of the central goals of the plan. But the assumption that slower growth in investment would be consistent with rising productivity did not prove out. Capital productivity in industry continued to decline at the same annual rate of 4-5 percent experienced in the last half of the 1970s.

Soviet planners also have made costly errors in allocating investment resources. In some cases, investment in large-scale capacities for improving the quality of raw materials such as

iron ore has been emphasized at the cost of modernizing capacities for finished products. In other cases, the planners have increased the Soviet capacity for manufacturing intermediate and finished products while neglecting to develop the raw material supplies essential to ensuring full use of that capacity. Many of the domestic bottlenecks experienced in 1981-82 were the result of such planning mistakes.

#### Systemic Problems

Economic growth is also held back by the USSR's system of planning and managing the economy. Economic planning and management are highly centralized, with key resources allocated by administrative fiat. As the economy has grown in size and complexity, it has become more difficult to manage. Moreover, as in previous plans, many of the key 1981-85 goals are unrealistic, based on projected productivity increases that cannot possibly be met. The result is to intensify the pressure on lower level managers to protect themselves through such practices as the hoarding of material and labor resources--and thus to aggravate already serious bottlenecks.

#### Economic Policies Under Andropov

As the first two years of the 1981-85 Plan neared completion, it must have become clear to Soviet leaders that their economic strategy was not working. The formulation of the 1983 Plan, undertaken before Brezhnev's death, provided an opportunity to make midcourse corrections in Soviet economic policies. Even as late as November 1982, Andropov's sudden assumption of power offered a chance for change. Nonetheless, on

the basis of information published on the 1983 plan and what has happened since, we conclude that Andropov is still holding tightly to the course set by Brezhnev. The possible exception is investment policy.

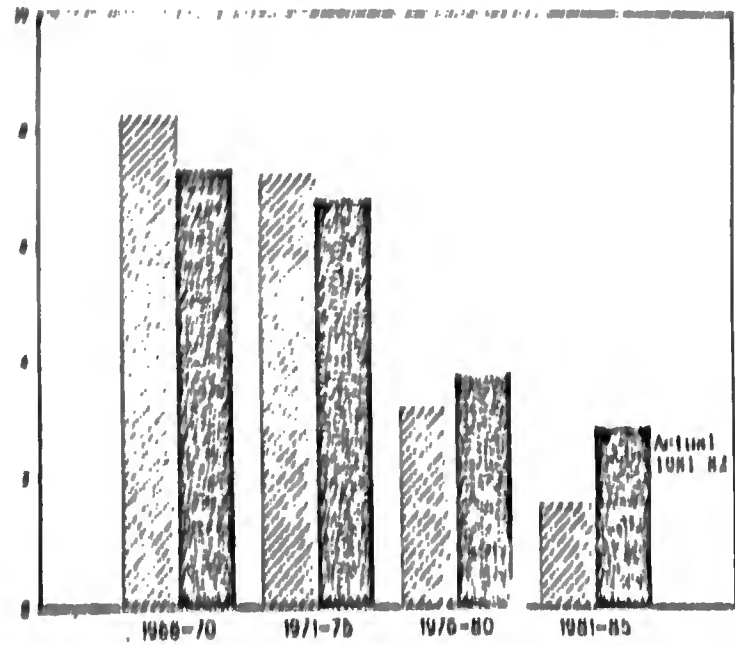
#### Investment

Because capital formation is so important in determining the directions of economic development, investment plans provide particularly useful clues to Soviet economic policy. Although information for 1983 is sparse, mid-year reported results do raise the possibility that the original five-year plan for total investment has been changed.

The investment policy laid down in the 1981-85 Plan called for the lowest rate of investment growth in the post-World War II era--about 1 1/2 percent per year on average. Actual investment expenditures, however, have grown somewhat faster than planned--by roughly 3 percent in 1981 and 1982, respectively (figure 4). Investment was scheduled to rise by nearly 2 1/2 percent in 1983, again slightly above plan. But results for the first six months indicate that investment may be growing at a much faster rate. State capital investment, which makes up about nine-tenths of total capital investment, increased by 6 percent compared with first-half 1982.

The step-up in investment could signify a change in economic policy. Indeed, the premise that increases in productivity required by components called for in the 1981-85 Plan are compatible with a slowing rate of investment has been challenged vigorously and publicly in the Soviet Union over the last two

# 1981-85 1976-80 1971-75 1966-70



Plan  
Actual

years. The sharp increase in investment growth in first-half 1983 could mean that the proponents of higher investment spending are winning out. In any case, much of the acceleration has been made possible by the industrial recovery (discussed below), which permitted increased production of machinery and equipment and construction materials. Some of the growth in investment is also the result of an increase in net imports of machinery and equipment in 1982 that are just now being assimilated into industry. The volume of imports of machinery jumped by about one-third in 1982.

#### Defense

Andropov's position on the share of resources that should go to the military is unclear. In his November 1982 plenum speech, he stated only that "defense requirements as usual have been sufficiently taken into account." During a highly-publicized visit to a Moscow machine-tool factory, however, he implied that a healthy economy is a precondition of military power--suggesting that defense could no longer count on retaining unquestionable priority in the distribution of resources.

The little evidence that is available indicates Andropov has not accelerated Soviet military spending. For example, the leveling off of weapons procurement in recent years has been accompanied by an increase in the share of machinery allotted to civilian uses. That trend, as noted above, appears to have continued in both 1982 and 1983. While we cannot be sure what Andropov's policy is, or will be, Soviet military capabilities will still increase substantially over the next several years

even if the rate of growth of procurement of military hardware does not increase. The USSR is already investing so much in military hardware that merely continuing procurement at the existing level would provide very large annual increments in holdings of military equipment.

### Agriculture

There also are no indications of significant change in agricultural policy since Andropov took power. Plans for crop production in 1983 have been set largely at the levels indicated originally in the 1981-85 Plan, and the General Secretary also appears to have thrown his full support to Brezhnev's Food Program.

Mikhail Gorbachev, the Soviet agricultural czar, has been lobbying hard for the more rapid and effective implementation of the part of the program dealing with structural reorganization--the so-called RAPOs.\* Soviet press reports and conversations of Soviet officials with Westerners indicate that the RAPOs have been resisted by the ministries and state committees involved. As a result, lack of control over service organizations that supply equipment, repair services, agricultural chemicals, and construction services has severely hampered the effectiveness of the RAPOs. To rectify the situation, the Andropov regime issued a decree in late July which attempts to merge the interests of farms and service organizations by tying rewards for service

\* A RAPO is a self-financing organization that includes all farms, service agencies (e.g. repair centers), and processing enterprises in a given district.



organizations to growth in the output and productivity of the farms that they serve.

As a means of providing better incentives for agricultural workers, Gorbachev also is actively promoting the collective contract system--an aspect of the Food Program that received relatively little attention before Brezhnev's death. In this system, farm workers are rewarded according to the size of the harvest rather than receiving hourly or piece work rates.

Andropov's support of the Food Program is also indicated by the continued large share of investment allocated to agriculture and the sectors supporting it in 1983. Although some Soviet officials believe that agriculture is already receiving a disproportionate share of the economy's resources, investment for farms and supporting industries is slated to rise by nearly  $4\frac{1}{2}$  percent this year--a higher growth rate than that scheduled for total investment--and will amount to about one-third of total investment. This is the share of investment resources that Brezhnev promised in the 1980s at the special Central Committee plenum on agriculture in May 1982.

One aspect of the Food Program that Andropov has been slow to embrace is the call for increased private plot production--which now accounts for about one-fourth of total Soviet agricultural output. Little has been done, for instance, either since Andropov took over or before, to assure private farmers supplies of much needed feedstuffs, seeds, fertilizers and pesticides, and small machinery and farm implements. Still, in an April speech to regional party leaders, the General Secretary

implied that every rural family ought to raise livestock. Because agriculture will have difficulty in meeting its goals over the next decade, Andropov is not likely to curtail private agricultural activity, despite his apparent lack of enthusiasm for it on ideological grounds.

#### Consumer Goods and Services

The new regime has shown concern for the welfare of the population in a variety of ways. First, a flurry of decrees has been published this year calling for improvements in the level of daily services and in the supply of consumer goods provided to the population:

- A resolution was adopted by the Central Committee in February demanding that ministry, department, and union republic officials perform better in constructing housing and consumer service facilities.
- A joint Central Committee-Council of Ministers resolution was published in March calling for an expansion of the number of repair and cleaning shops; more personal services such as hairdressing, film developing, and the rental of consumer durables; and the establishment of more convenient working hours in the service sector.
- A joint Central Committee-Council of Ministers decree passed in late April discusses "the additional production" of consumer goods, contains unusually blunt warnings to consumer ministries to shape up, and instructs several state committees to prepare new measures to improve planning, incentives, and price-setting in the consumer

goods sector.

The priority the leadership has given the Food Program in part also mirrors high level preoccupation with living standards. Judging from Soviet press reporting on Politburo meetings, for instance, the Andropov government has devoted more time to agriculture than any other domestic issue. The recent reorganization of the Central Committee to include a separate Department of Light Industry and Consumer Goods also suggests that consumer interests are being given greater attention. Finally, the regime is continuing the campaign initiated under Brezhnev to increase the production of consumer goods in heavy industry and may intend to import more machinery for use in consumer industries.

Nonetheless, the regime has little room for maneuver on consumer issues until the Food Program pays some return and until more investment can be spared for the production of soft goods and consumer durables. In his June plenum speech, in fact, Andropov stressed that improvement in the standard of living will be slow. Increases in income, he has maintained on several occasions, must be closely linked to increases in labor productivity.

#### Foreign Trade Policy

The foreign trade plan for 1983 suggests that Moscow still is bent on increasing trade with its Warsaw Pact partners and other Communist countries at the expense of trade with the West. In his annual report to the Supreme Soviet, Nikolay Baybakov, Chairman of Gosplan, said that trade with Socialist

countries would increase nearly 8 percent--more than double the annual rate of the past two years--and would reach 58 percent of total Soviet trade turnover. He implied that trade with capitalist countries would drop about 4 percent. Aside from the desire to reduce the reliance of CEMA countries on the West, a likely explanation for this objective is that Moscow is planning on some decline in its hard currency earnings capacity this year (perhaps because it expects reduced earnings from exports of oil and arms, both of which hit record highs in 1982) and is purchasing less grain.

Reductions in Soviet shipments of oil to Eastern Europe suggest that East European countries may not receive increases in deliveries of raw materials from the USSR. It also appears that the Soviet Union will pressure its Warsaw Pact allies to reduce their deficits on bilateral trade with the USSR, and boost their exports, especially those of higher quality goods, to the USSR. But the East Europeans--facing critical economic and financial problems of their own--will be neither willing nor able to provide Moscow much assistance in providing substitutes for imports from the West. The East European countries would be hard pressed to increase their exports of machinery and equipment and of manufactured consumer goods even more than now planned.

If the East Europeans cannot boost their exports to the Soviet Union enough to eliminate the deficits, Moscow could help itself by scaling back its deliveries to Eastern Europe of goods marketable in the West. Because further cutbacks in raw materials deliveries would be a serious blow to Eastern Europe,

we have thought that the Soviets would be reluctant to take such action. On the other hand, Moscow may be more willing now than in the past to squeeze Eastern Europe. Martial law appears to have controlled tensions effectively in Poland, and there has been little overt discontent in any of the other East European countries despite harder economic times.

#### Other Initiatives

The major new element of economic policy this year is the "discipline campaign." Andropov does not believe that greater discipline alone will cure the economy's ills, but he sees it as a necessary beginning. He apparently is confident that coercion or the threat of coercion can increase worker discipline and that greater discipline will raise productivity.

The campaign is designed to tighten discipline all around, including management discipline. Andropov has, in fact, fired some allegedly corrupt or incompetent officials. The Minister of Railways, for instance, was fired shortly after Brezhnev's death. Minister of Internal Affairs Nikolay Shchelokov also was removed from his post at the plenary session of the Central Committee in June, reportedly because of involvement in corrupt activities. In their places, Andropov has brought in some younger, better-educated, and perhaps more innovative officials. To date, however, the campaign appears to have been directed primarily against blue-collar workers. In particular, the regime has sought to compel workers to put in a full day's work. Both internal security forces and militia teams are being used to search for workers absent from their jobs without

permission.

A second phase in the campaign was introduced this August. A new decree introduced sanctions (loss of vacation, loss of pay, and even dismissal) against workers AWOL or drunk on the job and offered financial rewards to more productive laborers. Judging from leadership statements, additional measures to reinforce labor's commitment to better job performance are likely to be forthcoming.

In the more ideologically sensitive area of reforming the planning and management of the economy, the new regime has introduced some limited measures designed to decentralize decisionmaking in both industry and agriculture. A mid-July joint party-government decree is the most comprehensive step in this direction to date. This "economic experiment" involves five industrial ministries and will begin in January 1984. The decree gives enterprise management more latitude in using investment and wage funds, largely in an effort to spur technological change and innovation. It also ties worker and management benefits more closely to enterprise performance, with contract fulfillment as a key success indicator.

Andropov's endorsement of small labor teams in industry, construction, and agriculture also qualifies as an attempt to increase local initiative in the decisionmaking process, this time at the lowest production level. The brigade organization of industrial labor and collective contract system for farm workers allow the enterprises increased flexibility but at the same time make profits and wages more dependent upon final results.

The Andropov leadership has also instituted a new law on labor collectives--the first nation-wide labor code. Adopted by the Supreme Soviet session in June, it calls for increased worker participation in management. It does not, however, materially expand workers' rights or give them a significant managerial role. Mainly, it increases labor obligation to help implement plans and campaigns imposed from above. The attempt to represent the law as giving workers a voice in economic management suggests an effort to improve worker morale--and productivity--by creating the illusion of greater power for labor.

#### Assessment of Andropov's Policies

Has the Soviet economic game plan changed in any essential way since Yuri Andropov replaced Leonid Brezhnev? The answer is no. Continuity has been far more pronounced than change. Soviet planners, for instance, are not trying to put the economy back on the five-year plan track with the possible exception of agriculture. The growth target for industrial production in the 1983 plan (3.2 percent), for example, is well below the average annual rate of growth implied by the 1981-85 Five-Year Plan (4.7 percent). Although there may be new emphasis on some of the economic policies inherited from the previous regime, the central core of policies laid down by the new leadership is within the bounds of those established during the Brezhnev years.

-- One feature of Andropov's investment policy--more renovation and modernization and less new construction--is an intensified version of an investment strategy that has been followed for seven years with little success. There

is working now in it; it was a main feature of the 1976-80 Plan and a central part of the current five-year plan.

- In the area, the priority given to overall investment, Andropov's policy may be different from Brezhnev's. Investment has been stepped up in 1983, although we cannot be certain that its priority will be sustained.
- Andropov has stuck with the Food Program as the answer to agricultural problems.
- In consumer affairs, there has been no real change or innovation. Andropov has exhibited solicitude for consumers, but has not backed up that concern with new programs or more resources for consumer industries.
- Nor has Moscow's trade policy or the structure of trade changed much under Andropov. More trade with the West would seem helpful in easing Soviet economic strain since East European products are, for the most part, not viable substitutes for Western goods.
- The changes in planning and management announced so far all have roots in the Brezhnev era if not earlier. Andropov's has retained strong central control over the key economic decisions--for example, price formation--while tolerating some devolution in day-to-day decisions.

The new trend we have observed in military procurement, together with continuing domestic economic problems and the recent political succession, does raise important questions about the future of the Soviet defense effort. We previously had



estimated that defense spending would continue to grow in real terms through at least 1985. We still consider that likely. The question is whether the Soviets will rebound from the procurement slowdown, so that defense spending will return to (or even exceed) the 4 to 5 -percent average annual growth rate of 1966-76, or whether little or no growth in procurement will slow the increase in overall expenditures for some time. Because we do not fully understand the causes of the slowdown, we cannot provide a reliable answer.

The new regime, which apparently came to power with the support of the military, may well be under pressure to speed up defense spending. For example, in the first three years of this decade we believe the Soviets have already had as many systems under development as in each of the previous two decades. Steady expansion of production floorspace has occurred since the mid-1970s providing the Soviets with the potential to translate the new systems into deployments in the field. Any major effort to sharply accelerate the level of military procurement, however, could make it even more difficult to solve the fundamental economic problems facing the Soviets. It would require lower civilian investment and slower growth or even a fall in per capita consumption and could, over the long run, erode the economic base of the military-industrial complex itself. Moreover, we do not know how quickly the Soviets will be able to overcome the problems that may have contributed to the recent procurement slowdown: some appear to be pervasive and will be difficult for the Soviet system to correct. Regardless of how

the leadership decides to approach the resource allocation issue, it will not be able to avoid it for long. The planning cycle for the 12th Five-Year Plan--1986-90--is already under way.

### Outlook for 1983

This year some of the economic pressures on the Andropov leadership should ease slightly. After two years of low growth in 1981 and 1982, the economy seems poised for a rebound in economic performance. Based on statistics available for the first seven months of 1983, we estimate that GNP will rise by 3 1/2 to 4 percent--well above the approximately 2 percent rate of growth achieved in both 1981 and 1982 and close to the 4 percent annual rate of growth implicit in the 1981-85 Plan.

All major sectors of the economy are doing better this year. After several years of steady decline, for example, industrial performance has begun to improve. Industrial production was almost 4 percent higher in the first seven months of 1983 than in the comparable period of 1982. The rebound in industry probably owes much to the better than normal winter and spring weather conditions, which permitted some rebuilding of stocks of fuels and other inputs less in demand when the weather is mild. Most important, better weather appears to have eased transportation difficulties, thus relieving bottlenecks generally.

Other factors that have contributed to improved industrial performance include recent additions to capacity, notably in steel and chemicals; managerial personnel changes; and perhaps greater effort reflecting a sense that, with the change of

leadership, a period of drift had ended. In this connection, the discipline campaign probably played a part in the recovery from the poor performance in 1981-82 by eliciting greater effort from the work force and putting some managers in fear for their jobs.

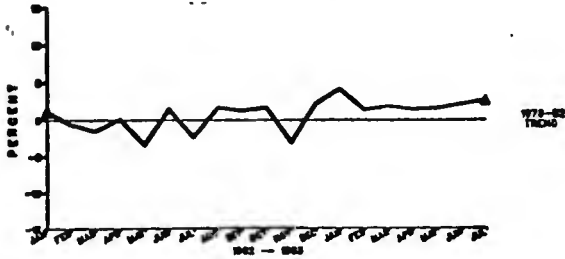
The role of the Andropov administration in the industrial recovery seems to be minor, however. The production gains reported thus far reflect in large part recovery from the poor performance at the beginning of 1982. Output of most industrial commodities actually began to pick up on a seasonally-adjusted basis in mid-1982, so that the overall contrast between the two years will not be so favorable to 1983 by yearend (figure 5). We estimate that industrial production will grow about 3 percent this year, somewhat higher than the 2.4 percent annual rate of growth achieved in 1981-82. Under Andropov, industrial production has returned to the growth path characteristic of 1978-82, not to the higher rates of earlier periods.

Following four consecutive years of poor agricultural performance a substantial recovery is in the cards for Soviet agriculture in 1983. We expect total farm output to increase by 7-8 percent compared with somewhat more than 3 percent in 1982 and almost no growth in 1981. Total production of farm products this year, in fact, could be roughly 1 percent above the previous high of 1978. Barring a major deterioration in weather conditions, according to USDA, a grain harvest of 200 million tons is likely, well above the estimated 158-million ton crop informally reported by the Soviets for 1981 and the 180 million

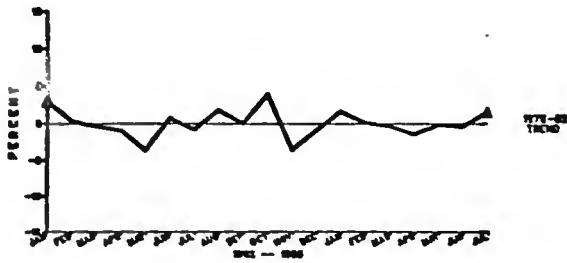
Figure 5

USSR: Deviation of Industrial Production  
From Recent Trend\*

Civilian Industry



Fuels and Power



Industrial Materials

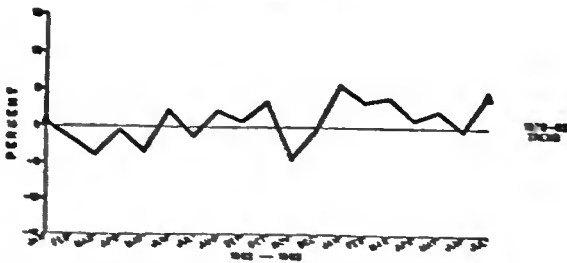
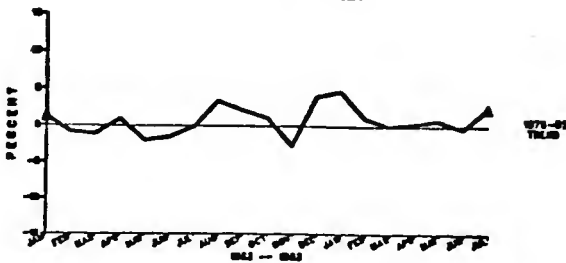
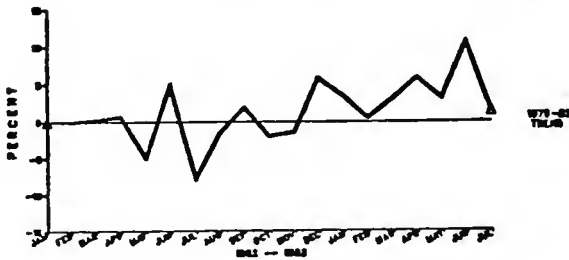


Figure 5 (cont.)

## Civilian Machinery



## Consumer Goods



\* The monthly production indexes are calculated from a smaller sample of commodities than those represented in the annual production indexes. The average trend rate of growth shown for 1978-82 in this figure will therefore differ from those based on full-year data. Nevertheless, we believe that the samples used in extending the monthly indexes are comprehensive enough to signal changes in growth rates over time, or--as in this figure--to compare performance pre-Andropov and post-Andropov.

ton harvest estimated by USDA for 1982. Both of these estimates are well below the 1978 record of 237 million tons. The outlook for other major crops is also good. Production of sunflower seeds, sugar beets, vegetables, potatoes, and cotton is expected to exceed the average of recent years.

In the crucial livestock sector, meat output from state and collective farms--which produce about two-thirds of total Soviet meat--reached a record level during the first seven months of 1983. A number of factors were at work: (1) the quantity of forage crops harvested last fall was a record; (2) relatively mild weather last winter coupled with an early spring this year bolstered Soviet livestock feed supplies; (3) the increased availability of high-protein feeds--particularly soybean meal and single-cell protein--has improved the efficiency of feed rations this year (that is, the amount of product produced from a unit of feed). With herd numbers now at record levels, the stage is set for substantial growth in total meat production this year after four years of relative stagnation. Output could reach 16 million tons--5 percent above the 1979-82 average--if grain production reaches or exceeds 200 million tons, at least 20 million tons of grain are imported, and ample supplies of forage crops remain available through the rest of the year.

Meanwhile, the availability of quality foods has increased somewhat since Andropov came to power, although not enough to permit relaxation of the informal rationing system for selected food items. Surveys of private farm markets and state retail stores, for instance, have shown increased supplies of most

foodstuffs. Various reports also suggest that in many regions the food shortages prevalent since at least 1980 have become less severe.

The Soviets are still finding it hard, however, to provide adequate supplies of nonfood consumer goods. Retail trade turnover in real terms grew by  $1\frac{1}{2}$  percent in the first six months of 1983 compared with first-half 1982 while the average monthly wage of workers increased by more than 2 percent. The continued low growth in retail sales is caused partly by production problems in the industries manufacturing soft goods and consumer durables. The production of textiles, for example, has been hampered by shortages of quality cotton.

Imports of nonfood consumer goods will help somewhat. Moscow bought about \$10.5 billion worth of these goods last year, almost 70 percent of them from Eastern Europe. In internal prices these purchases accounted for a substantial share of retail sales of nonfood consumer goods--about 15-20 percent.

Railroad performance has also improved markedly in the first 6 months of 1983. Freight turnover climbed to 1.8 trillion ton-kilometers, a 3.7 percent increase over first half 1982--it had fallen 2.3 percent during the same period in 1982. A number of factors may have been responsible. The relatively mild weather experienced so far this year has certainly helped. The priority attention given to the transport sector by the new leadership probably is also a factor. Politburo member Geydar Aliyev was given special responsibility for overseeing the railroads earlier this year, and a campaign to enlist industrial enterprises and

other shippers in the repair of damaged freight cars has been instituted. Still, reports of supply disruptions and delayed shipments are continuing. As in industry, the record in the second quarter of this year suggests that the initial burst of higher performance in Andropov's early months is not being sustained (figure 6). Because the problems in the transport sector cannot be resolved quickly, transport snarls can be expected to be a drag on the economy over the next several years.

With brighter prospects in agriculture, Soviet planners will not have to worry so much for the time being about hard currency availability. Nonetheless, we believe that the hard currency trade deficit will increase slightly in 1983. In the first half of the year both exports and imports remained at about first-half 1982 levels. A drop in agricultural purchases was offset by increased purchases of pipe and machinery and equipment and of Libyan oil for resale to Soviet customers in the West. Oil sales for hard currency could remain below the 1982 level for the year as a whole, however. The USSR may feel it cannot cut deliveries to Eastern Europe again this soon.

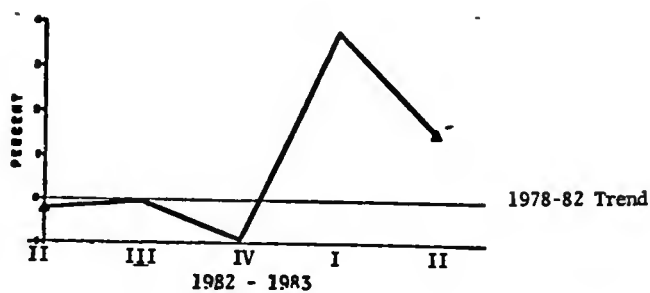
#### Longer Term Outlook

A stronger economic showing this year would help Andropov politically, but it would not--in our view--foreshadow a higher growth rate over the longer term. The problems that have constrained growth since the late 1970s have not gone away; some of them, in fact, are just now reaching peak severity.



Figure 6

USSR: Deviation of Railroad Freight  
Turnover From Recent Trend



Slower Growth in Labor and Fixed Capital

For example, the increment to the working age population--about 389,000 persons--will be lower this year than at any time in the last two decades (figure 8) and will continue to diminish through 1986. Growth of capital stock also will slow during the 1980s because of the slowdown in investment that has occurred since 1975. Unless plans for investment change drastically, we project that the supply of labor and capital to the economy in the 1980s will rise by only 2 ½ percent per year during the remainder of the 1980s compared with an average annual increase of nearly 4 percent in 1970s.

Given the slower growth of labor and capital, elevating growth above the recent trend rate of about 2 percent a year would require a dramatic reversal of the prevailing trend in productivity. For example, sustaining the GNP growth rate of 4 percent per year that prevailed in 1971-77 would be possible only if productivity increased by nearly 1 ½ percent per year. In fact--as the tabulation below shows--the combined productivity of inputs of labor, capital, and land has been decreasing for over a decade:

Average Annual Percentage Change<sup>a</sup>

	<u>1966-70</u>	<u>1971-75</u>	<u>1976-80</u>	<u>1981-82</u>
GNP	5.3	3.7	2.7	2.1
Inputs of labor and capital	4.1	4.2	3.6	3.1
Factor productivity	1.1	-0.5	-0.8	-1.0

<sup>a</sup> From appendix C, Table 14.

The likelihood that the Soviets can recapture the productivity gains of the late 1960s is small.

-- The discipline campaign may be exacting a somewhat greater effort from Soviet workers, but, judging from numerous reports of half-hearted enforcement and of workers often ignoring appeals and threats designed to make them work harder and longer, the long term impact would appear to be marginal.

-- A substantial improvement in real incentives seems unlikely, Andropov himself having indicated that the standard of living, at best, will rise only slowly over the next several years.

-- Andropov's evident reluctance to undertake major systemic changes (discussed below) is a significant barrier to substantial improvements in efficiency or accelerated technological progress.

#### Imbalances

In addition, many of the unfavorable developments that converged to slow industrial growth in the late 1970s will continue to do so during the rest of 1980s. Because planned investment will be inadequate to add capacities needed for planned growth in output--especially in the extractive branches where both depletion rates and investment costs will continue to rise rapidly--shortages of raw materials and a deterioration in the quality of many materials will continue. In particular, slow growth of steel production will constrain machinery output and hence investment. Spot shortages of energy of the sort

experienced in recent years will continue. Shortfalls in chemicals production also will hamper production in a variety of industries to which it provides raw materials, and slow growth of construction materials output will be a further drag on investment. Transportation also will continue to be a problem, particularly the railroads which will continue to operate under strain.

In agriculture, Andropov faces the same problems as Brezhnev in improving agricultural efficiency: bureaucratic resistance to changes in organization, weak incentives for farm workers, insufficient skills in the farm labor force to manage production and to use and maintain machinery properly, and a lack of economic infrastructure (roads, storage areas and the like) in rural areas. The greatest impediment, however, remains the failure to allow farms more freedom to make decisions at the local level about the composition of output and about planting and harvesting schedules.

In this connection, although Moscow is placing increasing emphasis on agricultural self-sufficiency, imports of 20-30 million tons of grain and 2-3 million tons of oilseeds and oilseed meal will be needed annually to support livestock expansion plans during the next several years, even with normal harvests. The Soviets are committed through long-term trade agreements with the United States, Canada, Argentina, and some smaller suppliers to purchase about 20 million tons per year through 1985.

On the other hand, we believe that the Soviet energy

situation will not seriously constrain economic growth during the 1980s. This judgment is based on our latest study of the Soviet oil industry and our resulting reassessment of Soviet energy prospects into the 1990s. The principal conclusions of these two studies are as follows:

- The combined output of oil, natural gas, and coal will increase by 10 to 12 percent in 1981-85 compared with the 17 percent planned for this period and the 22 percent achieved in 1976-80. In the latter half of the decade energy production will be about 6 percent greater than in 1981-85. Indeed, with oil output expected to be in decline by the late 1980s and coal production stagnant in terms of energy content, the increases in fuel availability during the remainder of this decade will be largely the result of rising gas output.
- The Soviet Union has thus far averted the downturn in oil production that CIA had earlier predicted by virtue of an enormous, brute-force development effort that has tapped a petroleum reserve base larger in size than we previously believed. The cost of doing this has been high, but we think that the Soviets have already allocated enough investment resources to the oil industry to permit them to come close to their production target of 12.6 million b/d by 1985.
- Because Moscow is likely to continue to increase the total amount of economic resources going to the oil industry during the 1986-90 Plan but at a slower rate, oil

production probably will plateau by the middle of this decade and then subside slowly.

- Increments in energy production will become increasingly expensive, and the USSR will find it hard to maintain oil exports--a development that will constrain hard currency earnings.
- All things considered, however, we no longer believe that major energy shortages will make a substantial difference for growth in GNP unless things go very badly in the oil sector.

#### Work Incentives

An integral feature of Andropov's campaign to tighten labor discipline and stimulate productivity is his strong support for linking wages and bonuses to the contribution of the individual worker and tying remuneration more directly to production results. In his public statements Andropov has harshly attacked the long-time practice of wage leveling because it conflicts with the priority the regime has assigned to raising labor productivity. But long cultural conditioning in the work force and the difficulty of reversing trends entrenched for the last 20 years will present substantial obstacles to broad use of increased wage differentials.

Serious obstacles also stand in the way of continued implementation of the discipline campaign. Public tolerance of a tough discipline drive 30 years after Stalin is likely to be tenuous and transitory. In the current labor market, moreover, management will be reluctant to crack down on workers, who can

easily quit and find jobs elsewhere, often at higher pay. Firing workers also goes against the grain of Soviet society, which guarantees a right to a job. Punitive measures against the worst offenders may help, but they cannot substitute for economic reforms to remedy fundamental problems with the incentive system.

There are also political risks in pushing the anticorruption campaign too far. Young party workers who were frustrated by the slow rate of promotions under Brezhnev may welcome a change, but the fear of a purge reportedly impelled many regional officials to oppose Andropov's succession. Any wholesale drive to purify the party could provoke further resistance.

#### Prospects for Relief Via Foreign Trade

In our judgment, the regime will not be able to rely substantially on increased imports to relieve resource pressures in the domestic economy during this decade. Our projections indicate that--barring another round of spiraling oil prices--Soviet hard currency purchasing power will not rise significantly through 1990. Consequently the USSR will have difficulty financing more than modest growth in hard currency imports unless it is willing to accept a sharp increase in its debt. Western credits are one--and a relatively immediate--means of financing additional hard currency imports. But Soviet debt management policy would first have to become less conservative, and Western governments would probably have to provide significantly greater encouragement and guarantees to Western banks.

Nor will the Soviets be able to go much further in reducing

net exports to Eastern Europe. Most East European countries are struggling to sustain some positive growth in GNP while putting their hard currency balances in order. The USSR and its East European allies seem unable even to agree on an agenda for a CEMA summit (proposed by Brezhnev two years ago) to discuss their mutual economic concerns. The principal issue in dispute is a Soviet push for greater economic integration, which would give CEMA, but in reality the Soviets, far-reaching authority over planning and production in individual countries. The East Europeans oppose such integration because they fear it would tie them even closer politically and economically to the USSR. The East Europeans--who want guarantees of future deliveries of Soviet energy and raw materials--also fear that Moscow would use the summit to announce additional cuts or to impose harder conditions on their energy and raw material exports to Eastern Europe.

#### Potential for Better Performance

The regime could improve the performance of the economy in a number of ways. Some investment resources, for instance, could be redirected to sectors where their payoff is greater than at the present time. The current investment plan is lopsided and lacks balance; it stresses development of energy and agriculture at the expense of other sectors also vital to economic growth. A greater return could probably be achieved by shifting more investment to such sectors as machinebuilding, transportation, and ferrous metals. Finally, holding down growth in defense spending would free up resources that could be used to bolster



the civilian economy.

Some gains could be achieved also by identifying those areas in the economy where mismanagement and administrative inefficiency are worst and replacing the managers responsible at all levels with more competent people. Indeed Andropov has removed a number of managers, although the shifts thus far have not been as dramatic as some Soviet officials had anticipated. Clearly there is a good deal of dead wood to be removed. Whether political obstacles and bureaucratic opposition will prevent a managerial shakeup on a broad scale is still uncertain. After a few years, however, unless the system changes to promote innovation or managerial initiative, a new generation of administrators would probably fall back into the practices of their predecessors.

The greatest potential for economic gain in the long term, however, lies in more "radical" measures that would alter Soviet economic mechanisms. While we believe that caution and conservatism characterize Andropov's approach to economic change, we cannot rule out the possibility that he might yet introduce more innovative economic programs. Andropov's freedom of action in his first year as General Secretary probably has been restricted. He is bound, to some extent at least, by an annual economic plan made before Brezhnev's death. Moreover, still lacking an independent political base and still much indebted to those who helped elevate him to power, he must move with circumspection.

Since he replaced Brezhnev, Andropov has been extremely candid in acknowledging his dissatisfaction with the performance

of the economy and has indicated on occasion that some problems may stem from built-in systemic shortcomings. In a major speech in mid-August, for instance, he underscored the necessity for changes in planning, management, and economic mechanisms before the start of the 1986-90 Plan period and expressed dissatisfaction with the pace at which the economy is improving and the lack of vigor in the search for solutions to its problems. From time to time, he has also encouraged wide-ranging public discussion and debate on what ails the Soviet economy and how to improve its organization and management.

The major constraint, however, in changing the Soviet economic system is that Andropov and the rest of the leadership--for compelling cultural, economic, and political reasons--will not dismantle the command economy and replace it with some form of market socialism. A planned economy is all Soviet leaders have ever known. They do not understand the economic rationale for markets and believe that, however efficiently markets may operate at the enterprise level, they necessarily produce chaotic results on a economy-wide scale. Planning, by contrast, is not only mandated by "Marxism-Leninism", but it is seen as being responsible for the elevation of the USSR to world superpower status. Andropov's adherence to this line of thinking is made crystal clear in his recent article in the party's ideological journal Kommunist. There he states that only change within the existing bounds of socialism will be considered.

Consequently, Andropov is likely to rely primarily on Brezhnev's legacy of programs and proposals for change worked out

between 1978 and 1982. Thus the central issue now facing the leadership is what direction to move in carrying out already approved policies, what to select from a menu of fairly well-known alternative ideas, and what commitment it is prepared--or able--to undertake in attempting to enforce its will. A case in point is the recently announced economic experiment--Andropov's only significant new program to date. When closely scrutinized it is very limited--it is confined to a few selected ministries and contains little that is new.

We are likely to see an increase in the number and variety of such reform proposals. In his mid-August speech, Andropov said that changes would be made before the start of the 1986-90 Plan but that they would be undertaken carefully and only after unhurried evaluation of large scale experiments. In addition, a high level committee under the leadership of new Central Committee Secretary Nikolay Ryzhkov was formed earlier this year to review the party's options for changing the economic system and given a year or more to report back.

Given the emphasis on study and small-scale experiments, we think that reforms of organization and management will have little impact on the economy during the next few years. Indeed, the improved performance in 1983 may even reduce the pressure for economic change in the short run.

#### Striking a Balance

A point stressed in our testimony last December before the Joint Economic Committee of Congress still holds. Despite its problems, the USSR is not on the verge of economic collapse. The

Soviet economy is the second largest in the world, with a large and literate population, a huge industrial plant, and an enormous endowment of natural resources. Moreover, a highly centralized, rigid system of administering the economy enables the leadership to mobilize resources to focus on key objectives. The USSR has found ways to muddle through periods of economic difficulty in the past, and it will do so again in the 1980s.

We emphasize that economic growth is likely to continue--not at the rapid pace of this year, but at a trend rate of about 2 percent a year.

We would also note that the strains on the Soviet economy may be somewhat less than we thought a year ago.

- First, the outlook for oil production looks less unfavorable. To recapitulate, we now expect that production will hold roughly steady through the mid-1980s and then will fall only gradually through 1990.
- Second, we have revised downward our estimates of how fast defense spending has been growing, implying greater availability of resources for other uses than we had estimated earlier.
- Third, despite Andropov's basic caution and conservatism, his more energetic approach to improving the existing economic system makes Soviet economic prospects seem slightly brighter than they appeared last year.

## Appendix A

Estimating Soviet Defense Expenditures

This appendix explains in some detail the methodology we use to derive the dollar and ruble estimates.

Background

Because of the uncertainties surrounding the true coverage of the announced Soviet defense budget and the clear evidence based on observable defense activity of a much higher level of ruble outlays, two principal methodologies have arisen for estimating how much the Soviets spend on defense. The first relies on deriving implicit costs from published Soviet economic statistics. The second, used only by CIA because of the large amount of data on Soviet military activities needed to apply it, is the direct-costing or building-block approach. This approach requires the identification and enumeration of physical elements of the defense effort over time and the application of direct-cost factors. Although all methodologies involve uncertainty, we find the building-block approach to be more reliable because it is based on the Intelligence Community's detailed estimates of the physical components that make up the Soviet effort.

We define "defense" differently for different purposes. Our dollar estimates cover those national security activities conducted in the US by the Department of Defense as well as the defense related programs of the Department of Energy and US coast Guard. To understand how the Soviets might view their defense effort we also use a broader definition that also includes civil

space programs, railroad and construction troops, and internal security forces. The ruble estimates are customarily presented in terms of this broader definition.

Estimates of Soviet defense costs are computed by resource category. These are defined as follows:

- Investment - the costs of replacing, modernizing, and expanding forces through the procurement of weapons and equipment, including major spare parts, and the construction of facilities.
- Operating - The costs of personnel, equipment maintenance, and logistics associated with the routine functioning of the Soviet armed forces.
- RDT&E - the costs of exploring new technology, developing new weapons systems and developing improvements to existing systems.

We calculate the ruble and dollar costs of all Soviet defense activities except RDT&E by identifying and listing Soviet forces and their support apparatus. Our model contains a description of over 1,000 distinct defense components--for example, individual classes of surface ships; ground force divisions, divided into categories on the basis of type and readiness level; and air regiments, categorized by aircraft type for each service--and our latest estimates of the order of battle, manning, equipment inventories, and new equipment purchases for each of those components.

Although we are confident in the basic trends, there are uncertainties inherent in these estimates. We are fairly

confident of our estimates of the physical quantities that go into the Soviet defense effort because once the major weapon systems have been produced and deployed, we can measure what is there. Our projection of future weapon production, however, is obviously less certain.

We are somewhat less confident in the prices we use. We have an adequate sample of ruble prices to measure Soviet costs in the base year of those prices--1970. However, over the last dozen years, Soviet prices and cost relationships have undoubtedly undergone considerable change.

#### The Ruble Estimate

To obtain our rubles estimates of Soviet defense spending, ruble prices are applied to the detailed estimates of physical resources. The procedure is complex but, in general, is as follows:

- Procurement - For many Soviet weapons we have an actual ruble price. For others we must derive a ruble price either by applying ruble-dollar ratios created for weapons groups or by using cost estimating relations (CERs) that make the price a function of certain performance parameters. The prices are multiplied by our estimates of the physical quantities of weapons used by the Soviet forces.
- Operating - Personnel costs are calculated by multiplying the estimates of the number of men in each military organization by ruble factors covering each type of personnel-associated outlay. Ruble maintenance costs are

derived from knowledge of Soviet operating rates.

Operating costs combine our knowledge of Soviet operating rates with rubles costs for utilities, POL, and civilian labor.

- RDT&E - RDT&E is estimated directly from official Soviet statistics. (For this reason, it is the least certain part of our estimates.)

The results, not including RDT&E, are aggregated by Soviet service, resource category, or military mission.

### The Dollar Estimate

The dollar estimates begin with the same set of Soviet physical defense activities as the rubles but instead apply appropriate US dollar prices and wage rates.

- Procurement - we estimate what it would cost to build the actual Soviet weapons and equipment in the United States at prevailing dollar prices for materials and labor (including overhead and profit), using US production technology and assuming the necessary manufacturing capacity, materials, and labor would be available.
- Operating - Personnel costs are derived by estimating the military rank of the person in the United States who would be assigned the duties of each Soviet billet and then applying the appropriate US pay and allowance to that billet. O&M costs are derived by applying dollar prices to estimates of labor, materials, spare parts, overhead, and utilities required to operate and maintain equipment the way the Soviets do.



-- RDT&E - To estimate the dollar cost of performing Soviet RDT&E activities in the US, the aggregate ruble figure is converted into dollars.

Once again, the results, not including RDT&E, can be aggregated by service, mission, or resource category.

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Table 1

USSR: GNP by Sector of Origin at Factor Cost  
(billion 1970 Rubles)

	<u>1970</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>
GNP*	383.3	459.8	481.8	497.4	514.2	516.1	524.7	536.1	547.0
Industry	122.6	163.6	170.1	177.0	182.8	186.6	191.8	196.6	201.0
Agriculture	81.0	72.0	80.2	83.0	86.0	78.5	74.0	73.7	76.0
Construction	28.0	36.8	38.0	38.9	40.1	40.4	41.3	42.2	42.5
Transportation	33.4	45.8	47.8	48.8	51.1	52.3	54.3	56.4	57.1
Communications	3.3	4.7	5.0	5.3	5.6	5.9	6.2	6.5	6.7
Trade	28.0	35.0	36.3	37.6	38.8	39.6	40.8	41.8	42.1
Services	78.5	92.7	95.0	97.3	100.3	103.2	106.6	109.2	111.6
Other (including military personnel)	8.4	9.3	9.4	9.5	9.6	9.6	9.7	9.8	10.1

\* Components may not add exactly to total because of rounding.

Table 2.

USSR: GNP by End Use at Factor Cost  
(billion 1970 Rubles)

	<u>1970</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>
GNP <sup>*</sup>	383.3	459.8	481.8	497.4	514.2	516.1	524.7	536.1	547.0
Consumption	207.8	247.3	252.8	260.1	267.8	275.1	283.7	289.5	291.7
goods	133.1	158.6	161.4	166.7	171.2	175.8	181.5	184.9	185.0
services	74.6	88.7	91.4	93.4	96.6	99.4	102.2	104.6	105.7
Investment	108.2	140.6	151.8	159.5	165.5	168.0	172.2	178.5	183.2
Other	67.3	72.0	77.2	77.8	80.9	73.0	68.8	68.1	72.2

\* Components may not add exactly to total because of rounding.

Table 3

USSR: Value Added in Industry at Factor Cost  
(billion 1970 rubles)

	<u>1970</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>
Industry <sup>a</sup>	122.6	163.6	170.1	177.0	182.8	186.6	191.8	196.6	201.0
Ferrous metals	8.8	10.7	11.0	11.0	11.3	11.3	11.2	11.2	11.1
Nonferrous metals	4.8	6.4	6.6	6.8	6.9	7.1	7.2	7.3	7.3
Fuel	12.1	15.4	16.0	16.7	17.2	17.7	18.0	18.3	18.7
Electric power	8.3	11.7	12.5	12.9	13.5	13.9	14.6	14.9	15.4
Machinebuilding & metalworking	38.5	56.6	59.9	63.3	66.5	69.3	72.2	74.6	77.5
Chemicals	7.6	11.7	12.3	12.9	13.4	13.4	14.0	14.5	14.8
Wood, pulp, and paper	9.4	10.7	10.7	10.7	10.7	10.3	10.5	10.8	10.9
Construction materials	8.0	10.4	10.8	11.1	11.5	11.0	11.0	11.2	11.0
Light industry	9.8	11.2	11.6	11.9	12.2	12.4	12.7	13.0	13.0
Food industry	11.6	14.1	13.9	14.5	14.3	14.8	14.9	15.2	15.6
Other industry	3.6	4.8	4.9	5.1	5.3	5.4	5.6	5.7	5.8

<sup>a</sup> Components may not add exactly to total because of rounding.

Table 4

United States and USSR: Production of Selected  
Commodities in Selected Years

	1970	1975	1978	1980	1981	1982
<b>Primary energy</b> (million b/d oe)						
US	29.5	28.6	28.9	30.5	30.4	30.1
USSR	18.3	23.2	26.6	28.2	29.0	29.8**
<b>Oil*</b> (million b/d)						
US	11.3	10.0	10.3	10.2	10.2	10.3
USSR	7.1	9.8	11.4	12.0	12.2	12.3
<b>Natural Gas (Dry)</b> (trillion cubic feet)						
US	21.0	19.2	19.1	19.6	19.4	17.8
USSR	7.0	10.2	13.1	15.4	16.4	17.7
<b>Coal</b> (million metric tons)						
US	555.8	593.9	608.0	752.7	747.3	756.1
USSR	624.1	701.3	723.6	716.4	704.0	718.0
<b>Electricity (gross)</b> (billion kilowatt-hours)						
US**	1,743	2,131	2,436	2,438	2,448	2,387
USSR	741	1,039	1,202	1,294	1,326	1,366
<b>Iron ore (million metric tons)</b>						
US	91.2	80.1	82.9	70.7	75.5	37.0
USSR	197.1	234.7	246.2	245.0	242.0	244.0
<b>Bauxite (thousand metric tons)</b>						
US	2,125	1,800	1,669	1,559	1,510	700
USSR	6,700	8,000	8,800	9,100	9,100	9,000
<b>Pig iron (million metric tons)</b>						
US	83.0	72.5	79.6	62.3	67.3	39.1
USSR	85.9	103.0	110.7	107.0	108.0	107
<b>Crude steel (million metric tons)</b>						
US	119.3	105.8	124.3	101.5	108.8	65.7
USSR	115.9	141.3	151.5	148.0	149.0	147.0

\* Including natural gas liquids.

\*\* Estimated.

Table 4 (cont.)

	<u>1970</u>	<u>1975</u>	<u>1978</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>
Refined copper (thousand metric tons)						
US	2,074	1,632	1,869	1,726	2,026	1684.0
USSR	1,015	1,320	1,460	1,520	1,530	1510.0
Primary aluminum (thousand metric tons)						
US	3,607	3,519	4,358	4,654	4,489	3,274
USSR	1,490	2,130	2,330	2,460	2,475	2,490
Lead (thousand metric tons)						
US	605	577	565	550	500	515
USSR	470	540	580	600	600	560
Refined zinc (thousand metric tons)						
US	866	450	441	370	345	298
USSR	690	820	875	900	900	820
Gold (million troy ounces)						
US	1.7	1.0	1.0	1.0	1.3	1.4
USSR	7.0	8.3	9.5	10.2	10.4	10.6
Synthetic ammonia (million metric tons of N)						
US	10.3	12.2	12.8	14.7	14.2	11.5
USSR	6.3	9.9	11.5	13.8	14.6	15.4
Mineral fertilizer (million metric tons, nutrient content)						
US	14.8	17.1	19.0	22.5	23.2	19.2
USSR	13.1	22.0	23.7	24.8	26.0	26.7
Nitrogen fertilizer (million metric tons of N)						
US	7.6	8.5	9.5	11.2	11.8	10.5
USSR	5.4	8.5	9.3	10.2	10.9	11.2
Plastics (million metric tons)						
US	9.7	10.2	12.4	12.8	13.1	12.4
USSR	1.7	1.8	3.5	3.6	4.1	4.1
Synthetic rubber (million metric tons)						
US	2.2	2.0	2.7	2.2	2.2	1.8
USSR	0.9	1.4	1.8	1.9	1.9	1.8
Woven cotton fabrics						
US (billion linear meters)	5.7	3.7	3.7	3.4	3.6	3.0
USSR (billion square meters)	6.2	6.6	7.0	7.1	7.2	7.1

Table 1. cont.

	1971	1972	1973	1974	1975	1976
<b>Wool (million metric tons)</b>						
US	17.7	22.0	24.2	24.4	25.0	25.8
USSR	152.5	150.4	147.1	145.1	143.0	141.0
<b>Woolen goods (million metric tons)</b>						
US	6.5	6.7	6.2	6.4	6.2	6.0
USSR	2.3	2.2	2.1	2.1	2.0	1.9
<b>Woolen goods (million metric tons)</b>						
US	1.7	2.1	2.7	2.7	2.7	2.7
USSR	2.6	2.1	2.8	2.7	2.3	2.2
<b>Woolen goods (million metric tons)</b>						
US	67.4	67.8	66.2	66.8	66.1	65.5
USSR	95.2	92.1	91.1	89.1	87.1	84.0
<b>Woolen goods (million metric tons)</b>						
US	26.7	24.2	23.5	23.7	23.4	22.0
USSR	26.3	40.1	27.4	25.1	25.0	24.0
<b>Wheat (million metric tons)</b>						
US	36.8	57.9	48.3	54.5	46.3	45.4
USSR	99.7	66.2	120.8	98.2	81.0	86.3
<b>Coarse grain (million metric tons)</b>						
US	146.1	185.5	222.1	136.6	242.3	255.5
USSR	85.3	71.9	114.5	88.3	76.0	83.6
<b>Potatoes (million metric tons)</b>						
US	14.8	14.6	16.6	13.6	13.3	15.6
USSR	96.8	88.7	96.1	67.0	72.0	78.0
<b>Sugar (million metric tons)</b>						
US	5.3	6.0	5.7	5.3	5.6	5.4
USSR	11.1	11.3	13.3	11.0	12.3	13.2
<b>Meat (million metric tons)</b>						
US	22.5	23.0	25.0	24.3	24.5	23.8
USSR	12.3	15.0	15.5	15.0	15.2	15.2
<b>Milk (million metric tons)</b>						
US	53.3	52.3	55.1	58.3	60.2	61.6
USSR	83.0	90.8	94.7	90.9	88.5	90.1
<b>Ginned cotton (thousand metric tons)</b>						
US	2,219	1,808	2,364	2,422	3,426	2,602
USSR	2,343	2,674	2,669	2,858	2,947	2,732

a USDA estimate

b Excluding rice



Table 5

## USSR: Selected Indicators of Agricultural Output

	<u>1970</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>
Value of output <sup>a</sup> (billion rubles)	83.6	82.0	88.6	92.8	95.8	89.8	86.9	87.2	90.0
Commodity Production (million metric tons)									
Grain <sup>b</sup>	186.8	140.1	223.8	195.7	237.4	179.3	189.1	158.0 <sup>c</sup>	180.0 <sup>d</sup>
Potatoes	96.8	88.7	85.1	83.7	86.1	91.0	67.0	72.1	78.0
Sugar beets	78.9	66.3	99.9	93.1	93.5	76.2	81.0	60.8	71.3
Sunflower seed	6.14	4.99	5.28	5.90	5.33	5.41	4.62	4.68	5.30
Cotton	6.89	7.86	8.28	8.76	8.50	9.16	9.96	9.64	9.28
Vegetables	21.2	23.4	25.0	24.1	27.9	27.2	27.3	27.1	29.2
Meat	12.3	15.0	13.6	14.7	15.5	15.3	15.1	15.2	15.2
Milk	83.0	90.8	89.7	94.9	94.7	93.2	90.9	88.9	90.1
Wool	.419	.467	.435	.459	.467	.478	.461	.460	.460
Eggs (billions)	40.7	57.4	56.2	61.2	64.5	65.8	67.9	70.9	72.1

<sup>a</sup> Net of feed, seed, and waste in constant 1970 prices.

<sup>b</sup> Bunker weight. To be comparable to Western measures, an average reduction of 11 percent is required.

<sup>c</sup> Unofficially reported.

<sup>d</sup> USDA estimate

Table 6

USSR: Freight Turnover by Transport Mode.  
(billions of ton/kilometers)

<u>Year</u>	<u>Total All Modes</u>	<u>Railroads</u>	<u>Roads</u>	<u>Inland Waterways</u>	<u>Maritime</u>	<u>Pipelines (Oil &amp; Oil Products)</u>	<u>Air</u>
1970	3829.2	2494.7	220.8	174.0	656.1	281.7	1.88
1975	5200.9	3236.5	337.9	221.7	736.3	665.9	2.59
1976	5432.7	3295.4	355.1	222.7	762.2	794.6	2.71
1977	5632.7	3330.9	373.3	230.7	772.6	922.4	2.80
1978	5948.7	3429.4	396.0	243.7	827.6	1049.1	2.86
1979	5986.3	3349.3	409.6	232.7	851.1	1140.7	2.91
1980	6184.2	3439.9	432.1	244.9	848.2	1216.0	3.09
1981	6337.4	3503.2	458.9	255.6	853.4	1263.2	3.08
1982	6328.4	3464.2	464.0	262.5	827.9	1306.8	3.03

Table 7  
USSR: Estimated Hard Currency Balance of Payments

	(Million current US dollars)								
	1970	1975	1976	1977	1978	1979	1980	1981	1982
Current account balance	260	-4,607	-3,216	462	422	2,178	1,904	-100	4,508
Trade balance	-560	-6,297	-5,253	-2,942	-3,690	-2,018	-2,406	-4,000	-992
Exports, f.o.b.	2,424	8,280	10,225	11,863	13,336	19,417	23,584	23,778	26,552
Imports, f.o.b.	2,984	14,577	15,478	14,805	17,026	21,435	25,070	27,778	27,544
Additional military deliveries to LDCs, f.o.b. <sup>a</sup>	400	1,500	1,850	3,220	3,965	3,855	4,200	4,200	5,900
Net interest	-80	-570	-724	-848	-881	-799	-710	-1,300	-1,500
Other invisibles and transfers	500	760	911	1,032	1,028	1,140	900	1,000	1,100
Capital account balance	Negl.	6,522	3,888	2,830	1,734	338	1,628	5,940	-1,270
Gross drawings <sup>b</sup>	NA	6,371	5,495	2,857	3,096	4,474	2,865	6,300	2,600
Government backed	450	1,972	2,450	1,991	2,565	2,410	2,195	2,100	2,800
Commercial	NA	4,399	3,045	866	531	2,064	670	4,200	-200
Repayments	NA	969	1,365	1,955	2,332	2,800	3,051	3,200	3,400
Government backed	160	730	1,035	1,285	1,456	1,702	1,915	2,000	2,100
Commercial	NA	239	330	670	876	1,098	1,136	1,200	1,300
Net change in assets held in Western banks	NA	-395	1,611	-310	1,952	2,826	-234	-140	1,570
Gold sales	Negl.	725	1,359	1,618	2,522	1,490	1,580	2,700	1,100
Net errors and omissions <sup>c</sup>	NA	-1,915	-572	-3,292	-2,156	-2,516	-3,532	-5,940	-3,238

<sup>a</sup> These estimates exclude the value of arms-related commercial exports included in the reporting on Soviet exports to individual LDCs, which we estimate at about \$2 billion in 1981. They are based on the reported export residuals in published Soviet data on trade with LDCs (i.e., the difference between Soviet reported aggregate exports to the LDCs and Soviet reporting on exports to individual LDCs). The export residuals were reduced by the estimated value of Soviet exports of major arms systems to non-hard currency paying LDCs on a f.o.b. basis. The estimates also excludes the value of follow-on services, which may be substantial.

<sup>b</sup> Including additions to short-term debt.

<sup>c</sup> Reflects hard currency assistance to other Communist countries; hard currency trade with other Communist countries; hard currency credits to LDCs to finance Soviet sales of machinery and equipment (including military equipment); and credits to developed Western countries to finance sales of oil and other commodities, as well as errors in other line items of the accounts.

Table 8

USSR: Estimated Hard Currency Debt to the West

(Million US dollars, yearend)

	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>1982<sup>a</sup></u>
Gross debt	10,577	14,707	15,609	16,373	18,047	17,861	20,900	20,100
Commercial debt	6,947	9,662	9,858	9,513	10,479	10,013	13,000	11,500
Government and government-backed debt	3,630	5,045	5,751	6,860	7,568	7,848	7,900	8,600
Assets in Western banks	3,127	4,738	4,428	5,980	8,806	8,572	8,430	10,000
Net debt	7,450	9,969	11,181	10,393	9,241	9,289	12,470	10,100

<sup>a</sup> Provisional estimate.

Table 9  
USSR: Foreign Trade by Major Region

	(million current rubles)								
	1970	1975	1976	1977	1978	1979	1980	1981	1982
al Exports	11,520	24,034	28,022	33,255	35,668	42,426	49,635	57,108	63,165
Communist Countries	7,530	14,584	16,448	19,101	21,254	23,628	26,903	31,192	34,136
Developed West	2,154	6,140	7,834	8,817	8,699	12,506	15,862	17,247	18,849
Less Developed Countries <sup>a</sup>	1,836	3,310	3,740	5,337	5,715	6,292	6,870	8,669	10,180
al Imports	10,559	26,671	28,731	30,092	34,556	37,864	44,463	52,631	56,411
Communist Countries	6,873	13,963	15,104	17,171	20,744	21,427	23,650	26,742	30,816
Developed West	2,540	9,704	10,822	9,924	10,981	13,248	15,721	18,112	18,892
Less Developed Countries	1,146	2,999	2,805	2,997	2,831	3,189	5,092	7,777	6,703

<sup>a</sup> Including exports of military goods, which rose from an estimated 944 million rubles in 1970 to 5,352 million rubles in 1981 and 6,600 million rubles in 1982.

Table 10  
 USSR: Average Annual Growth of Per-Capita Consumption  
 (1970 established prices)

	Percent								
	1966-70	1971-75	1976	1977	1978	1979	1980	1981	1982 <sup>a</sup>
Total consumption	5.1	2.8	1.8	2.3	2.4	2.4	3.0	1.1	-0.7
Food	4.3	1.6	0	1.3	2.0	1.5	2.1	-0.5	-1.0
Soft goods	7.1	3.0	3.6	2.7	2.0	3.5	3.7	1.9	-0.6
Durables	9.1	10.0	5.6	8.0	3.3	3.6	6.7	5.3	-3.5
Services	5.8	4.6	3.8	1.7	3.8	3.8	3.8	2.6	2.1
Housing	2.1	1.7	1.4	1.4	1.4	1.3	1.2	0.8	1.2
Utilities	5.4	5.3	5.1	3.0	3.8	3.3	3.7	2.3	2.9
Transportation	8.0	6.1	5.0	-1.3	3.0	3.6	3.0	2.5	1.2
Communications	7.8	6.3	5.5	4.7	4.5	4.9	4.7	3.7	2.3
Repair and Personal care	8.4	5.7	5.0	4.1	6.2	6.1	6.1	4.4	3.5
Recreation	1.6	0.6	-2.5	-0.4	1.7	0.9	1.9	-0.4	-0.3
Health	3.2	1.4	0.9	0.8	2.9	0.7	0.1	-0.7	0.3
Education	5.8	1.4	1.6	1.2	2.2	1.2	1.7	0	0.1

<sup>a</sup> Preliminary.

Table 11  
United States and USSR: Production of Selected Consumer Goods

	1970	1975	1976	1977	1978	1979	1980	1981	1982
Food									
Grain <sup>a</sup>									
(kilograms per capita)									
US	910	1,154	1,197	1,208	1,242	1,345	1,184	1,450	1,461
USSR <sup>c</sup>	769	551	872	756	908	681	712	590	667
Meat <sup>d</sup>									
(kilograms per capita)									
US	110	106	117	114	112	104	107	107	103
USSR	51	59	53	57	59	58	57	57	56
Transportation									
Passenger automobile production <sup>e</sup>									
(units per hundred persons)									
US	3.19	3.11	3.95	4.18	4.12	3.74	2.81	2.71	2.18
USSR	0.14	0.47	0.48	0.49	0.50	0.50	0.50	0.49	0.48
Household equipment									
Washing machine production <sup>e</sup>									
(units per thousand persons)									
US	20	20	21	23	23	22	20	19	17
USSR	22	13	14	14	14	14	14	15	15
Washing machines in use <sup>f</sup>									
(units per thousand persons)									
US <sup>g</sup>	194	238	248	256	263	273	280	287	291
USSR	141	189	195	200	203	205	205	205	205
Refrigerator production									
(units per thousand persons)									
US	26	21	22	26	26	25	23	21	19
USSR	17	22	23	22	23	23	22	22	22
Refrigerators in use <sup>f</sup>									
(units per thousand persons)									
US <sup>g</sup>	336	340	344	349	349	352	352	352	349
USSR	89	178	194	210	225	240	252	262	268

<sup>a</sup> The data do not necessarily represent food available for consumption, because imports of foreign grain and exports of domestically produced grain are not included.

<sup>b</sup> Excluding corn silage and forage but including sorghum for grain.

<sup>c</sup> Including miscellaneous grains and pulses. Measured in bunker weight, i.e., gross output from the combine which includes excess moisture, unripe and damaged kernels, weed seeds, and other trash. For comparison with US or other country grain output, an average discount of 11 percent should be applied.

<sup>d</sup> Data are on a slaughter weight, bone-in basis.

<sup>e</sup> Data are for factory sales and include complete units exported for assembly.

<sup>f</sup> As of the end of the year.

<sup>g</sup> Data are understated because they are based on the number of households with one or more units; thus, a household with more than one is counted as having only one.

Table 12

USSR: Average Annual Employment by Sector  
(thousands)

Sector of the Economy	1970	1975	1980	1981	1982
Total	103,774	113,942	121,990	122,988	123,932
Industry	31,593	34,054	36,891	37,236	37,550
Construction	9,052	10,574	11,240	11,298	11,321
Socialized agriculture	23,440	22,756	21,600	21,300	21,141
Transport and communications	9,315	10,743	11,958	12,172	12,375
Trade, public dining, sales & material technical supply, procurement	7,537	8,857	9,694	9,828	9,880
Health, education, social security, cultural arts, science & scientific services	16,561	19,196	21,515	21,909	22,275
Government administration, credit & insurance organizations	2,226	2,707	3,144	3,218	3,265
Other (housing, personnel services, etc.)	4,050	5,055	5,948	6,027	6,125



Table 13.

## USSR: Gross Fixed Capital Investment\*

(Billion rubles, 1973 prices)

	1970	1975	1976	1977	1978	1979	1980	1981	1982
Total investment**	80.7	112.9	118.0	122.3	129.7	130.7	133.7	138.8	141.7
of which									
State	69.2	98.0	103.0	106.9	113.9	114.6	117.7	122.7	125.4
Collective farms	7.6	10.7	11.0	11.3	11.6	11.8	11.9	11.9	12.0
Cooperative enterprises and organizations	2.2	2.4	2.3	2.5	2.5	2.5	2.5	2.5	2.7
Private housing and apartments	1.6	1.8	1.7	1.7	1.7	1.7	1.6	1.7	1.6
Industry	28.5	39.7	41.6	43.5	45.6	45.7	47.6	49.9	NA
Agriculture	14.3	23.3	24.3	24.9	25.8	25.3	26.9	27.5	NA
Transport and communications	8.0	12.7	13.3	13.9	16.3	16.2	16.1	16.8	NA
Construction	3.0	4.3	5.0	4.7	5.2	5.3	5.4	5.8	NA
Other	26.9	32.9	33.8	35.3	36.8	37.2	37.7	38.8	NA

\* Source: IDI Reference Aid, SOV 82-10093 (Unclassified), August 1982, Soviet Statistics on Capital Formation and N.kh. SSSR, 1922-1982.

\*\* Components may not add exactly because of rounding.

Table 14

USSR: Growth of GNP and Factor Productivity  
(average annual percentage change)

	<u>1966-70<sup>a</sup></u>	<u>1971-75<sup>a</sup></u>	<u>1976-80<sup>a</sup></u>	<u>1981</u>	<u>1982</u>
Gross national product <sup>b</sup>	5.3	3.7	2.7	2.2	2.0
Combined inputs <sup>c</sup>	4.1	4.2	3.6	3.2	3.1
Manhours	2.0	1.7	1.3	1.0	1.1
Capital	7.4	8.0	6.9	6.7	6.1
Land	-0.3	0.8	Neg.	Neg.	Neg.
Total factor productivity	1.1	-0.5	-0.8	-1.0	-1.0
Manhour productivity	3.2	2.0	1.3	1.2	0.9
Capital productivity	-2.0	-4.0	-4.0	-4.2	-3.8

<sup>a</sup> For computing average annual rates of growth, the base year is the year prior to the stated period

<sup>b</sup> Based on indexes of GNP (1970 rubles), by sector of origin, at factor cost.

<sup>c</sup> Inputs of manhours, capital, and land are combined using weights of 55.8 percent, 41.2 percent, 3.0 percent, respectively, in a Cobb-Douglas (linear homogeneous) production function. These weights represent the distribution of labor costs (wages, other income, and social insurance deductions), capital costs (depreciation and a calculated capital charge), and land rent in 1970, the base year for all indexes underlying the growth rate calculations.

Table 15

USSR: Growth of Industrial Output and Factor Productivity  
(average annual percentage change)

	<u>1966-70<sup>a</sup></u>	<u>1971-75<sup>a</sup></u>	<u>1976-80<sup>a</sup></u>	<u>1981</u>	<u>1982</u>
Industrial production	6.3	5.9	3.2	2.5	2.2
Combined inputs <sup>b</sup>	5.7	4.9	4.5	4.1	3.6
Manhours	3.1	1.5	1.6	0.9	0.7
Capital	8.8	8.7	7.7	7.8	6.9
Total factor productivity	0.5	1.0	-1.2	-1.6	-1.3
Manhour productivity	3.1	4.4	1.6	1.6	1.5
Capital productivity	-2.3	-2.6	-4.2	-4.9	-4.3

<sup>a</sup> For computing the average annual rates of growth, the base year is the year prior to the stated period.

<sup>b</sup> Inputs of manhours and capital are combined using weights of 52.4 percent and 47.6 percent, respectively, in a Cobb-Douglas (linear homogeneous) production function. These weights represent the distribution of labor costs (wages and social insurance deductions) and capital costs (depreciation and a capital charge) in 1970, the base year for all indexes underlying the growth rate calculations.